



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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No. RMP/A/27-ORI/BHU/2019-20

Date: 25.10.201

सेवामे

Shri M. D. Rustagi, Director,
M/s Rungta Sons Pvt. Ltd.
Rungta Office, Main Road,
Barbil, Keonjhar,
Odisha- 758035

विषय: Approval of Review of Mining Plan of Sanindpur Iron & Bauxite Mine along with Progressive Mine Closure Plan (PMCP), over an area of 147.10 ha in Sundargarh district of Odisha State, submitted by M/s Rungta Sons Pvt. Ltd under Rule 17 of MCR, 2016.

- संदर्भ: - i) Your letter No. RSPL/ED/GEO/2019-20/679 dated 30.09.2019.
ii) This office letter of even no. dated 01.10.2019.
iii) This office letter of even no. dated 01.10.2019 addressed to Director of Mines, Government of Odisha copy endorsed to you.

महोदय,

This has reference to the letter cited above on the subject. The draft Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) has been examined in this office based on site inspection carried out on 19.10.2019 by Shri Ramkishan R, Senior Assistant Controller of Mines & Shri S R Mazumdar, Senior Mining Geologist. The deficiencies observed are enclosed herewith as Annexure I.

You are advised to carry out the necessary modifications in the draft Review of Mining Plan in the light of the contents vide Annexure 1 and submit **three (3) firm bound and two (2) soft copies of the document text in CD 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 CD)** with financial assurance under Rule 27 of MCDR 2017 of the 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 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 final copies of the Review of Mining Plan. It may be noted that no extension of time in this regard will be entertained and the 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.

भवदीय

(हरकेश मीना)

क्षेत्रीय खान नियंत्रक

Copy for kind information and further necessary action to Shri Abhijit Sen, Shri H S Biswal & Shri S K Garnaik, M/s Rungta Sons Pvt. Ltd, Rungta Office, Main Road, Barbil, Keonjhar, Odisha-758035.

(हरकेश मीना)

क्षेत्रीय खान नियंत्रक

Scrutiny comment on Review of Mining Plan including PMCP in respect of Sanindpur Iron and Bauxite mines, 147.10 Ha of M/s Rungta Sons (P) Ltd. in Sundargarh district of Odisha State

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. In Para 1 (a), the name and address for correspondence of nominated owner with contact details such as telephone no, fax no, email id etc. have not been furnished along with information submitted. Need to submit the same.
3. All the categories/grade of Ore above cutoff grade should be termed as "Ore" and between threshold value and cutoff grade as "Mineral Reject". The term "subgrade" should be replaced by "mineral rejects". Necessary corrections to be done at all places in text, table and plates.
4. The term "processed low grade ore/subgrade/low-grade" analyzing between 45% Fe to 58% Fe part of ROM should be replaced with the term "Mineral Reject" and the term "Processed Ore" analyzing above 58% Fe should be replaced with "Ore". Necessary corrections to be done at all places in the document.
5. The term "concentrate" should be removed from all places in text. Need to do necessary correction.
6. The information furnished under Para 3 should be in Para 3(1). In Para 3.1, the date of approved mining plan/review of mining plan should be given in tabulated format.

S. No	Mining Plan / Review of Mining Plan etc.	Submitted Under (Rule Reference)	Approval Letter No. & Date	Period	Valid up to

7. In Para 3.3, review of earlier approved proposal in respect of exploration, excavation, reclamation, environment etc. furnished is incorrect. Further, review have not been given year wise from 2015-16 to 2019-20 (up to Sep'2019) along with reason for deviation. Need to do necessary corrections.

PART-A: (1). GEOLOGY AND EXPLORATION:

8. 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 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.
9. The structural information like strike, dip, dip-direction etc. has not been shown. All these information should be reflected on geological plan and section. Further, Ore zone and litho units should be depicted on plan and section based on surface exposure, borehole logs and threshold value.
10. The geological succession of bauxite ore in the lease area has not been described. The existence of lateritic iron ore and float ore in western part of lease area are not considered in reserve/resources estimation. The coordinate of patches of lateritic iron ore as furnished in text should be depicted in geological plan. Need to do necessary correction.
11. Expenditure incurred in exploration is not updated considering the bore drilled in 2018-19 and not considered in updation of reserve/resources as furnished. Need to do necessary correction.
12. The reference of stratigraphy under regional geology has not been mentioned. The younging direction of the stratigraphy has not been shown with arrow mark. The information of already drilled BH to be submitted as per following format:

Year of drilling	Exploration Agency	Borehole No	UTM Coordinate		Top mR	Bottom mR	Borehole Depth	Angle of drilling	Type of drill hole(Core/RC/DTH)	No of samples collected	No of samples analyzed
			Northing	Easting							

13. Table no 1.9 should be omitted. In page no. 45, the reference of bulk density should be modified for ore and mineral reject respectively as per NABL test reports. Need to do necessary correction.
14. 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 two years only i.e. 2020-21 & 2021-22. Additional boreholes to be proposed where the existing boreholes have been terminated in ore or closed prematurely. Further, boreholes have to be proposed over area proposed for backfilling. Only after proving the area to be barren through boreholes, backing could commence. Necessary corrections to be done.

15. The details of the proposed boreholes should be furnished in the following tabulated format.

Year of drilling	Section No	Proposed BH No	Northing	Easting	Collar RL	Core/RC/DTH	Proposed Depth of BH (in meter)	Inclination	Forest/ Non Forest/ Diverted Forest area	Surface Right/ Non-Surface right area	Surrendered area applied/ retained area

16. Parameters considered for resource estimation has not been considered as mentioned in IBM appraisal of MP 2014.
17. In Geological sections, the lithocorrelation should be done scientifically. The lateral and depth ward influence of ore body should be limited to depth as per the provision of Part II point no.4 MEMC Rules 2015. The Geological section should corroborate with the lithology. UNFC codes have not been shown in geological sections. The gap areas in the geological sections above the UPL have not been filled with relevant lithology. Need to do necessary correction.
18. 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 in Table no 1.26 and 1.28. The average grade of iron ore resources in 334 category has not been furnished. The summary of ore and mineral reject along with grade under various level of UNFC should be furnished.
19. The patches of lateritic iron ore and float ore as shown in geological plan and section have not considered in resource estimation and not justified under UNFC.
20. Bulk density test report from either Govt Laboratory or NABL accredited should be submitted. Justification of recovery factor considered for resource estimation established through time series data have not been furnished.
21. In all the tables of reserves and resource estimated, the reserve/resource as on date.... should be furnished.

PART-A: (2). MINING:

22. Justification for area proposed for mining has not been submitted with respect to exploration, mineral conservation etc.
23. The description of the existing pits/waste dumps/mineral rejects dumps and stacks in the following table to be furnished. Their nomenclature should be also reflected in relevant plans and sections.

Existing Pits:

Block/ Pit	Location (Grid)		Size of Pit (in m)		Surface area covered (in Ha)	Top RL (m)	Bottom RI (m)	No of benches		
			Length	Breadth				Ore	MR	OB
	Northing	Easting								

Existing Waste Dumps and Mineral reject dumps:

Name of the waste dump/ mineral reject dump	Location (Grid)		Top RL (in m)	Bottom RL (in m)	No of terrace	Area Occupied (in Ha)
	Northing	Easting				

24. The information regarding existing and proposed waste dumping sites over mineralized or non-mineralized area, within or outside UPL, temporary or permanent should be furnished in detail in tabular format. The rehandling of existing and proposed waste dumps should be proposed if their sites fall within the UPL and over mineralised areas with technical justification.
25. Details of existing fines stacks indicating its location (in UTM coordinate), quantity etc. should be furnished in tabulated format.
26. Information of existing and proposed machineries with capacity should be proposed. Necessary correction in the calculation need to be done.
27. In Para 2.A (b) (1), the total of in-situ excavation figs have not been furnished in the format specified in IBM appraisal of MP 2014 both in cum and in tones in separate table.

28. A table showing year wise ROM (Ore & Mineral Reject in tones), Waste in cum from insitu and dump workings should be furnished in tabular format along with total ROM and Waste quantity.
29. 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, UPL after complying scrutiny point no. 10 & 26 etc. to be done along with others. Need to do necessary correction and update at relevant places.
30. Year wise development and production plan should be furnished in the following tabulated format.

Particular for the year...		
Bench Geometry	Height (in m)	
	Width (in m)	
	Individual bench slope angle	
Quarry Development	Location (Quarry Name)	
	Extent of Development (in UTM coordinate)	
	Sections considered for development	
	Number of benches	
	Benches considered for development with RL	
	Top RL	
	Bottom RL	
	Direction of advancement	
	Dimension of the quarry at the end of the year including existing benches	
	Area occupied (in sq. m)	
	Overall quarry slope angle	
	Production of Ore (in MT)	
	Generation of Mineral rejects ore from quarry (in MT)	
Production of ROM (Ore+Mineral Reject) in MT		
Total Generation of waste (in cum)		

31. As discussed during field inspection, mining activities such as proposed dump, slime dam and mineral storage area etc. proposed during the period 2020-21 to 2024-25 should be removed from the forest area as per EC condition. Need to modify the proposal accordingly.
32. Detail study report for structural stability, slime pond designing etc. for proposed new slime pond in the diverted forest area considering the excavation (drilling & blasting etc.) from new pit and dumping in dump-B should be submitted from institute of repute (government agency) incorporating the recommendation in the review of mining plan else the proposal for construction of new slime dam in diverted forest area should be modified accordingly.

3. MINE DRAINAGE:

Name of the Quarry	At the end of plan period (mRL)		At the end of conceptual period (mRL)	
	Top	Bottom	Top	Bottom

33. In para 3 (b), the max and min depth of working should be given in following tabulated format.

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

34. The details of existing fines stack and waste dumps should be rechecked and corrected.
35. 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.
36. The proposal for dumping may be given in tabulated format as shown below: Further, Build-up of dumps from year to year to be mentioned in text w.r.t. designed capacity of dumps, bottom and top mRL of individual terrace, dump slope, individual terrace height and slope with description of method & manner of disposal of waste should be mentioned. The method of waste dumping should be in retreating manner. The year wise buildup of dump should be described.

Year	Waste to be dumped (in m3)	Dump No	Location of dumping (coordinates)	Proposed area (m2)	Proposed dumping mRL.	No of terrace proposed.	Individual Terrace height	Slope of the terrace

37. Existing as well as proposed protective measures like retaining wall, garland drain, check dams etc., should be furnished in tabular format with details of location, length, dimensions etc., a separate table should be given showing the year wise construction of retaining wall, garland drain and settling tank having specific proposal.

Details of year wise proposal for construction of retaining wall, garland drain, settling tank etc. to be given with their location. Proposal for protective measures have not been submitted around mineral reject dumps and waste dumps.

38. It has been observed during inspection that some of the dumps are lying within the UPL. Therefore a proposal should be furnished to re-handle the dumps lying within ultimate pit limit. Need to modify the dump rehandling proposal.
39. The proposal for temporary stacking of mineral stacks should be modified to the extent that it will not hamper the overall systematic and scientific development of the mine. Need to modify the proposal accordingly.
40. Backfilling proposal should be justified to the extent that before commencement of backfilling the area is devoid of mineralization justified through plans and sections showing subsurface lithology, BH date etc. else proposal for backfilling should be modified accordingly. Further, the area has to be proved barren with fresh drilling before commencement of backfilling. Need to modify the exploration as well as backfilling proposal accordingly.

PROCESSING OF ROM AND MINERAL REJECTS:

41. 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 processing should be furnished. Need to modify processing proposal accordingly in all relevant text part of the document.
42. In page 137, the size and grade at each stage of wet beneficiation have not been furnished.
43. In table 1, page no 133, the size "-3mm" mentioned as ball mill product is incorrect and should be omitted. Further, the recovery (%) and Quality (Fe %) of feed and product from beneficiation plant should be justified with study report designed for existing beneficiation plant. Also, the physical size and chemical composition of tailings should be specified. Need to do necessary correction in text as well as in flow sheet shown in page 137.
44. The details mentioned about wet beneficiation plant in page no 130 contracts the information furnished about beneficiation plant mentioned in table 1, page no 133. Need to do necessary corrections at all relevant places. Further, the details furnished for screening plant and crushing plant should be rechecked and corrected.
45. In page 131, Para 6.2, the flowsheet should be modified according to existing practices from ROM to dispatch. Justification of saleable ore of +30mm size has not been furnished or any further process involved in size reduction has not been described. The wet beneficiation for mineral reject has not been shown in the flowchart. Need to do necessary correction
46. Water requirement of beneficiation plant is not correctly furnished. It should be in tabular form with total requirement of water for mine and their consumption in different heads along with beneficiation plant (250TPH). Source of water, permission form concern department, recycle of water and water balance chat should be described in details.
47. The existing tailing pond with their location, shape and size, capacity, safety measures taken and manner of tailing disposal along with proposed tailing ponds if any should described and study report from reputed institution should be enclosed in annexure.
48. Complete details regarding physical and chemical characteristics of tailings, their possible reuse, if any along with the design, size and capacity of tailing pond should be indicated. Details of process of water treatment, if any and quality and quantity of final discharge and the place of its disposal (proximity to rivers, public well or any other public utility places) should be furnished.
49. Explain the disposal method for tailings or reject from the processing plant. Quantity and quality of tailings /reject proposed to be disposed, size and capacity of tailing pond, toxic effect of such tailings, if any, with process adopted to neutralize any such effect before their disposal and dealing of excess water from the tailings dam.
50. The steps to be taken for protection and stability of tailing dam, stabilization of tailing material and its utilization, periodic desilting measures to prevent water pollution from tailings etc., arrangement for surplus water overflow along with detail design, structural stability studies, the embankment seepage loss into the receiving environment and ground water contaminant if any may be described. Need to describe in detail.

OTHERS:

51. 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:

52. 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.
53. 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.

54. 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.
55. Year wise plantation covering number of saplings to be planted, location and area to be covered may be furnished. The same should be reflected in reclamation/rehabilitation measures tables furnished year wise. Proposal of coir matting/geo textile and area covered etc. may be furnished.
56. Financial assurance should be recalculated as per provision of rule 27 of MCDR 2017. The required amount of valid bank guarantee should be submitted. 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. The UPL should be restricted within the diverted forest area boundary. Need to update all relevant plans and section accordingly.
4. **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.
5. With reference to **CCOM Circular No 2/2010**, the geo-referenced mining leases map superimposed on latest high-resolution satellite data has not been submitted.
6. **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 plan should be updated based on the recent survey. Nomenclature of waste dumps and mineral reject dumps have not been shown.
7. **GEOLOGICAL PLAN & SECTION:**
 - (i) Geological plan and sections to be shown in 1: 2000 scale. The lithology of the forest 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 14. Proposed boreholes to be shown in dotted lines. Need to do necessary correction.
 - (ii) In the Geological Plan UNFC boundaries of G1, G2.. area has not been furnished as per Minerals Evidence of Mineral Contents Rules 2015.
 - (iii) Resources of bauxite ore and lateritic iron ore not furnished with UNFC codes.
 - (iv) Geological sections to be shown in equal intervals as per UNFC category. Sections to be prepared from lease to lease boundary.
 - (v) 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
 - (vi) 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.
 - (vii) The reserves and resources within the diverted forest area should be reestimated considering the UPL limit up to the diverted forest area boundary.
 - (viii) The UNFC code "122" shown in geological plan in forest area is incorrect and should be rectified.
 - (ix) Longitudinal sections have not been submitted. Need to submit the same.
8. **DEVELOPMENT PLAN & SECTION:**
 - (i) Year wise production should be revised and justified from proposed new pit considering the UPL restricted within the diverted forest area boundary.
 - (ii) Development plan and sections should be revised based on updated geological map and sections. Existing and proposed OB and mineral rejects dumps should be shown. The nomenclature of the dumps should be done.
 - (iii) Index of the UPL shown in plan and section and those shown in index is different.
 - (iv) The proposed and existing bench mRL to be shown clearly over year wise development plan and sections.

- (v) 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.
- (vi) 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.
- (vii) 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.
- (viii) Re-handling of dumps should marked in development plan & section. Development plan has not been furnished with existing benches.

9. DUMP PLAN AND SECTION

- (i) Dump plan and sections should be modified to the extent that sub surface lithology has not been shown. Dumping proposal should be outside the UPL and in barren area. Section showing reclamation of mined out pit through backfilling should be submitted with due justification of exhaust of minerals.

10. 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.

11. RECLAMATION PLAN:

"Environment management plan" to be replaced by "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.

12. 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.

13. CONCEPTUAL PLAN AND SECTION:

Conceptual Mine planning up to the end of lease period taking into consideration the present 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.

ANNEXURES:

1. Few photographs showing Land use of the lease area, environmental status of the area have not been furnished.
2. The tailings analysis from existing tailing pond representing entire tailing pond with samples collected at regular interval by third part and analyzed by third party NABL accredited laboratory should be submitted. The report should reflect the sample location point in a schematic diagram along with tailing analysis (Fe %).
3. The study report carried out for design and installation of existing beneficiation plant with material balance including feed, its product with recovery, grade etc. at each stage of processing should be enclosed.
4. Details of Qualified person like experience and qualification as per provision of rule 15 of MCR 2016 should be furnished.
5. Copy of quality of air, water, soil, noise and other environmental a parameters monitoring report of the last year should be enclosed.
6. 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.
7. Copy of valid bank guarantee has not been enclosed.
8. Copies of Form J and Form K of all drilled boreholes have not been submitted.
9. The chemical analysis results of borehole samples from NABL accredited laboratory have not been submitted.
10. NABL accreditation certificate of the laboratory has not been furnished.
11. Indexing of borehole logs with page numbers have not been done in sequence

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25/10/19
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