



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. MRMP/A/05-ORI/BHU/2020-21

Date: 08.06.2021

सेवामे

Shri Srinibash Sahoo, Managing Partner,
M/s Geetarani Mohanty,
House No-96, Station Road,
Barbil, Dist- Keonjhar,
Odisha-758035

विषय: Approval of modification of Review of Mining Plan of Raikela Iron Ore Mine along with Progressive Mine Closure Plan (PMCP), over an area of 67.586 ha in Sundargarh district of Odisha State, submitted by M/s Geetarani Mohanty under Rule 17(3) of MCR, 2016.

संदर्भ: - i) Your letter No. 58/GRM/IBM/2021-22 dated 19.05.2021 received on 31.05.2021.
ii) This office letter of even no. dated 31.05.2021.
iii) This office letter of even no. dated 31.05.2021 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.

महोदय,

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 by Shri Dayanand Upadhyay, Senior Asst. Controller of Mines. 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.

भवदीय,

(हरकेश मीना)

क्षेत्रीय खान नियंत्रक

प्रतिलिपि सादर सूचनार्थ और आवश्यक कार्रवाई हेतु Shri Susanta Maharana & Shri Pradeept Mohapatra, World Consultancy Services, At-Telengapentha, Dist- Cuttack, Odisha-754001.

(हरकेश मीना)
क्षेत्रीय खान नियंत्रक

Scrutiny comment on modification of Review of Mining Plan including PMCP in respect of Raikela Iron ore mine, Area 67.586 ha. of M/s Geetarani Mohanty in Sundargarh district of Odisha State.

GENERAL:

1. E-mail, phone & fax no. of Qualified persons have not been furnished on cover page. In introduction chapter history of the mines should be described with documentary evidence and marked with annexure.
2. In the certificate produced by the qualified persons, it is mentioned review of mining plan while the document submitted is modification of review of mining plan. Therefore it may be corrected accordingly.
3. Page-3, Para-(iii), at present the EC capacity of the mines is 2.99 MTPA, further enhancement of production leads to fresh environmental clearance. Therefore it may be described under the said para with documentary evidence if any.
4. Page no.-9. Para3.2, the date of modification under rule 17(3) of MCR 2016 for the year 2019-2020 and 2020-2021 has not been correctly furnished.
5. The Lessee is a partnership firm. Hence, all certificates, undertakings, consent letter etc. should be signed by the managing partner/nominated owner only. The copy of resolution passed by the partners of M/s Geetarani Mohanty should be furnished with their address and phone no.
6. The experience of qualified person should be clearly stated in supervisory capacity in the field of mining as per provision of rule 15(b) of Minerals (Other than Atomic and Hydro Carbons of Energy Minerals) Concession Rules, 2016.
7. Sequence of paragraph and its numbering should be covered as per IBM Manual Appraisal MP 2014.
8. All the annexure to be properly indexed/ numbered/ paged and signed by qualified person. All the certificates should bear dated signature.

GEOLOGY:

9. Page-20, under description of various litho-units in the ML area, average thickness of various Litho- units, along with their range as encountered in the boreholes drilled are to be furnished. Similarly in the description of structural features, type of the deposit is to be mentioned clearly ie whether the deposit is of regular habit or irregular habit
10. The structural information like strike, dip, dip-direction etc have not been shown. All these information should be shown in geological plan and section.
11. Bore hole logs as submitted in annexure are not marked with bore hole RL with their location. The lithology shown in bore hole logs are not depicted in geological sections as per order. The nos. of bore holes i.e BH1/19... as presented in bore hole logs are not depicted in geological plan and sections. All these should be re-checked and corrected accordingly.
12. The intimation of 56 nos. of bore holes has been submitted to this office vide letter no. 08/GRM/IBM/2019-20, dated 07/01/2020. However it has been observed that in the instant document the details of only 46 nos. of bore holes have been furnished. It may be clarified. The complete information of bore hole logs should be furnished along with form I and J.
13. Page 28, rule 12 (4) of MCDR 2017 states that “detailed exploration (G1 level) over the entire potentially mineralized area under the mining lease shall be carried out within a period of five years from the date of commencement of these rules”. Accordingly, the proposal of exploration to be given in following format:

Year	BH no.	Northing	Easting	Collar RL	Core/ DTH	Meterage	Inclination	Forest/ Diversified forest/non forest	Surface right/ non surface right	Purpose of bore holes

At the end of the table cumulative number of proposed BH in forest area, non-forest area, diverted forest area, Surface right area and non-surface right area to be given. The proposed bore holes should be depicted in geological section with their depth and RL for better referencing.

14. The Geological boundaries of exploration limit i.e. G1/G2/G3 etc. are not clear and not marked as per Minerals Evidence of Mineral Contents Rules 2015. The justification of G4 area should be furnished with analysis report if any.
15. Page no.30, in parameters considered for resource estimation, it is mentioned that out of total 134 drilled bore holes only 49 nos. of bore holes are considered for resource estimation which is not justified with geological sections. From geological sections it has been observed that more than 49 nos. of bore holes have considered for reserve/resource estimation. It should be re-checked and corrected.
16. The incremental enhancement of reserve and resources are not in the line of earlier approved document and additional bore holes drilled. The enhancement of reserve should be clearly defined with geological sections considering additional bore holes drilled comparing with earlier approve document. The enhancement of resources under 222 and 334 categories are also not justified.
17. Page-33, the gist of geological resources as furnished is not depicted with correct date. It is mentioned that recovery of ROM is 100% w.r.t total excavation. However it has been observed that only 96% of total excavation is considered for ROM as per calculation from geological sections. It may be clarified.
18. The basis of calculation of reserve and resources of +45 to 55%Fe and +55%Fe have not been justified with geological sections as the different grades of the ore are not furnished in sections.
19. The reserve and resources is not furnished as per Minerals Evidence of Mineral Contents Rules 2015. Refer geological sections SS', TT' & UU' the resources furnished under 222 and 334 categories are marked within UPL and UPL is not correctly drawn to delineate the reserve and resources. The UNFC is not correctly furnished and ultimate pit profile is not correctly defined considering the mineralization of blocked resources under high tension line. Therefore reserve and resources should be revised and re-calculated accordingly.
20. The nos. of samples analyzed from NABL accredited laboratory or Government laboratory are to be furnished with documentary evidence. As per guideline of "IBM manual on appraisal of Mining Plan 2014" at least 10% of total samples to be analyzed in accordance to BIS and reports form NABL accredited/Government Laboratory.

MINING:

21. Page-46, it has been observed that the top quarry, middle quarry and south pit as furnished in in text in terms of their length, breadth, depth, top RL and bottom RL are not updated and not matched with surface plan. All the parameters should be updated based on recent survey.
22. The stacks of mineral reject as presented in table are not furnished with average grade and quantity in tonnes. The quantity of mineral reject occupied in different stacks should be matched with annual/monthly returns submitted to this office with their average grade.
23. The excavation proposal should be modified as suggested in geology chapter after modification of the reserve and resources and re-defined ultimate pit limit considering the modifying factors.
24. It has been observed that the mineral reject dumps are lying over the mineralized area under ultimate pit limit. Therefore its details of re-handling proposal/future utilization should be discussed.
25. In year wise tentative excavation for the year 2021-22, the production carried out as on date should be furnished in bullet notes along with production proposal.

26. The projection of development of the year 2022-23 as shown in development plan for the year 2023-24 is not correct and it is extended in eastern side more than proposal. It may be re-checked and corrected.
27. The year wise development sections for the year 2021-22 to 2025-26 are termed as geological section which is not correct. It may be replaced with development sections. Needs correction in all plates.
28. In conceptual mining plan, cumulative waste generation and protective measures i.e restoration of safety zone and slope of the dump may describe properly. In pursuant to the order dated 14.01.2020 passed by MoM, GoI, 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 "re-grassing in mining area after closure of mines". Accordingly it should be discussed during conceptual period.

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

29. It has been observed that the waste dump-2 as proposed in eastern part of the lease area over the mineralized ground resulting hindering the scientific development and conservation of mineral. It may be clarified.
30. It should be ensured that the area proposed dumping should be proved non mineralised. The proposed temporary location of mineral reject as shown in development plan should be furnished with terraces to minimize the land degradation.
31. The proposal of dumping may be given in tabulate format as shown below. The year wise build up of dump should be described in details.

year	Waste to be dumped	Dump No	Location of Dumping (Grid)	Proposed area	Proposed dumping RL	No of terrace proposed	Individual terrace height	Slope of the terrace

32. The details of sub grade dumps and their analysis report should be submitted and discussed for their future use on the basis of their physical and chemical properties.
33. Details Existing and proposed retaining wall, garland drain, settling tank etc. to be given yearwise with their location. Location of sub-grade storage along with year to year development of to be given. Retaining wall and garland drain should be proposed around the mineral reject stack-2 and clearly shown in development plan.

PROGRESSIVE MINE CLOSURE PLAN:

34. Page-124, the reclamation and re-habilitation activities are to be carried out during plan period should be described year wise. The backfilling of mined out land, plantation and others protective measures should be furnished.
35. Updated air, water, noise, ground vibration and soil data with analysis from laboratory done at specified periodicity to be enclosed. Under impact on land, cumulative land degradation at present, at the end of proposal period and at the end of conceptual period may be given referring to conceptual mining plan.
36. Mitigation measures of impacts associated with mining i.e. mainly related to air, water, noise, vibration, land, aesthetics etc. are not given properly. The same to be elaborated.
37. Year wise plantation covering number of saplings to be planted, location and area covered may be furnished.

PRE-FEASIBILITY STUDY REPORT:

38. The content of feasibility/pre-feasibility report and analysis of economic viability of the project is not described in detailed as per rule 16 and Part-V of MEMC Rule 2015. The economic viability of the project

should be supported with NPV, IRR, Payback period by cash flow chart with cost involved in environmental and others protective measures and clearances, operational cost, administrative cost, infrastructure, royalty, NMET, DMF, closure cost etc.

PLATES:

39. All the plan and sections should be signed with date by certified surveyor, qualified person, mines manager and mining geologist. All plans and sections shall show a scale of the plan at least twenty five centimeters long and suitably subdivided. All plans & sections prepared shall follow the sign conventions mentioned under MMR 1961.
40. The plans and sections submitted bear the certificate that --the plans and sections are prepared based on the lease map authenticated by the state government. The CCOM circular no.2/2010 and its addendum should be implemented Wind direction may show through wind rose diagram in key plan and environmental plan.
41. Existing and proposed bench RL to be mentioned in the all plans and sections. The UPL should be shown in red colour in all relevant plans and sections. Magnetic Meridian and date of observation of should be given on all relevant plans. Approach road to the ML to be shown.
42. **Key Plan:** The key plan is to be prepared as per the provision of rule 32 (5) (a) of MCDR 2017. The boundaries of all villages and towns with their population, forests with tree density, approach road to lease area are to be furnished.
43. **Surface Plan:** Different land use may be shown with colour codes. Virgin area to be shown by contours and spot RL in surface plan. Forest & Non forest area, Surface right acquired area etc. should be marked clearly.
44. **Geological Plan & Section:** Data related to strike, dip, dip-direction etc. shown clearly. UNFC boundaries of G1, G2.. explored area are not marked clearly. Different type of ore i.e saleable ore and mineral reject has not been depicted in geological section. The lithology of the bore data are not matched with bore hole logs. The UNFC codes are not correctly furnished and UPL is not correctly marked to delineate the reserve and resources. Refer section MM' the proposal shown in different color should be omitted. All the geological sections should be revised considering influence of high tension line passes through the lease area. RL of bore holes have not been marked in plan and section. Sections are not matched with bore hole logs.
45. **Development plan & Section:** Direction of advance to be shown in development plan and section. Existing and proposed RL of benches/dumps should be mention clearly in development plan and section. Locations of existing as well as proposed features are to be shown in clearly in plan. Retaining wall and garland should be marked clearly yearwise with colour codes. UPL should be shown in red colour.
46. **Environment plan:** The Environment Plan as prepared should be satisfy the provision as laid down rule 32(5) (b) of MCDR2017. The proposed and existing environment protective measures to be shown in environment plan. The drainage pattern of the lease area also to be shown on the plan. Contours should be shown in core zone.
47. **Conceptual plan:** Conceptual plan may be prepared considering mineralization as revealed from the borehole logs. Direction of run off from the area based on surface contours may be shown on the plan and the sections.



(Dayanand Upadhyay)
Sr. ACOM