



भारत सरकार
खान मंत्रालय
भारतीय खान ब्यूरो
क्षेत्रीय खान नियंत्रक का कार्यालय

By E.Mail / Regd. Post
E- Mail: ro.bhubaneswar@ibm.gov.in

No. MPM/FM/22-ORI/BHU/2016-17

Plot No.149, Pokhariput,
Bhubaneswar,
Odisha-751 020.
दिनांक / Date: 26.12.2016

To

Shri Vineel Krishna, IAS,
Managing Director,
M/s OMC Limited,
OMC House, Bhubaneswar,
Odisha – 751001.

Sub: Approval of Modification of Approved Mining Plan of Roida-C Iron & Manganese Mines over an area of 192.81 ha in Keonjhar district of Odisha of M/s Odisha Mining Corporation submitted under rule-17 of Minerals Concession Rules, 2016.

- Ref: - i) Your letter no. 14713/OMC/2016 dated 20.10.2016.
ii) This office letter of even no. dated 17.11.2016.
iii) This office letter of even no. dated 17.11.2016 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.
iv) This office letter of even no. dated 14.12.2016.

Sir,

This has reference to the letters cited above on the subject. The draft Modification of Approved Mining Plan along with Progressive Mine Closure Plan has been examined in this office based on site inspection carried out on 16.12.2016 by Shri Dayanand Upadhyay, Assistant 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 Approved 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 CD in a single MS Word file (the drawing/plates should be submitted in Auto CAD compatible format and JPG format in resolution of 100x100 pixels on same CD)** with financial assurance under Rule 23 (F) of MCDR' 1988 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 Approved 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 Approved Mining Plan. It may be noted that no extension of time in this regard will be entertained and the Modification of Approved 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.

The document should be prepared as per "IBM manual on appraisal of Mining Plan – 2014" available on the IBM website at www.ibm.gov.in.

भवदीय / yours faithfully,

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

Scrutiny comments in respect of Modification and Review of Mining Plan of Roida-C Iron and Manganese ore Mine of M/s Odisha Mining Corporation Ltd. in district Keonjhar (Odisha)

Text:

1. GENERAL

Copy of identity proof of Nominated Owner is not legible. Further the list of Directors with address, e-mail id, contact number should be furnished in Chapter-1. The details of first grant of lease and subsequent renewal should be furnished. Location and accessibility, type of land has not been furnished correctly.

2. Details of approved Mining Plan/Scheme of Mining:

The review of Mining Plan/ Scheme of Mining has not been dealt properly. Further yearwise exploration has not been furnished with location of boreholes and their details in Form-J under Rule 47 of MCDR, 1988 to this office. The reason of modification under Rule 17(3) of MCR 2016 has not been furnished in para 3.6.

3. GEOLOGY AND RESERVE

The local geology of the lease area has not been described properly. The litho units present in the lease area should be described in details indicating their extent of exposure and size in detail. The copy of analysis of samples of iron & Manganese from NABL accredited laboratory or Government Laboratory have not furnished. Further year-wise future exploration programme has not been described properly it should indicates the grid interval location of the boreholes and total area covered under the same. The total area covered under exploration as depicted in tabular form may furnished with remarks about unexplored area. The reserves of manganese & iron ore has not been estimated as per UNFC norms and further the estimated reserve is not matching with the borehole data and geological section.

4. MINING

(a) Mine designing parameters i.e. height, width, slope angle of the bench have not been described properly and direction of advance RL benches at the end of each year has not been furnished. The blast design parameters i.e. depth of the whole spacing and burdens are not matching with the height of the bench. The proposed production limit is exceed from the quantity furnished in Environment clearance given by the Ministry of environment & forest. It

needs clarification. Necessary correction/modification should be made in the light of comments at relevant chapters.

- (b) Page-53, Proposed method for excavation has not been described properly. The nos. of benches in ore & OB, top & bottom mRL, nos. of quarries proposed may be described.
- (c) Para-2, page-53, it is mentioned that after crushing & screening sized ore will be transported to the consuming industries and captive plant of the lessee but name of captive plant & their location has not been mentioned.
- (d) Page 54-56, in yearwise development proposal cross-sections have not been depicted in table. In the development and production tables bench wise, year wise area of excavation and average thickness of the excavation or average area of cross section of bench and its average advance is to be given along with RL of bench with direction of advance at the end of the year.
- (e) As per litho unit soil cover lying on top but in tentative excavation program soil has not been shown. It may be justified.
- (f) Page 57-58, Para 5.1.2 bulk density of OB & ore and recovery factor has not been furnished.
- (g) In table no 5.1 waste / rejects considered as 24% of A and the rest is usable ore. as well as in table no 5.2 waste / rejects considered as 24% of A and the rest is sub grade ore. Properly justify the same. The tables may be placed at appropriate section of text. The production schedule as furnished in table 5.1 & 5.2 have not been matched with Insitu tentative excavation as furnished under para 5.1.2.
- (h) Parameters considered for machineries calculation is not correct. Bench height proposed 9m while in drilling & blasting parameters height of blast holes proposed 6m. It may be justified.
- (i) Optimum Charge per delay to be considered based on blast induced vibration study; accordingly most suitable drilling & blasting design along with initiation/firing pattern should be proposed and described.
- (j) Page-58, Environment clearance obtained for 460000 tonnes of Iron ore while tentative excavation has been proposed in 2019-20 is 460104T, in 2020-21 is 460047T & in 2021-22 is 460066T which are tending more than the limit of Environment clearance obtained. It may be rectify & correct.
- (k) Para-5.1.6, Conceptual mining plan, parameters considered for cumulative waste generation has not been defined clearly.

5. **Mine drainage:**

The depth of water table pre-monsoon and post monsoon should be given which should be supported by ground water monitoring study.

6. **“Stacking of mineral reject/ sub grade material and disposal of waste”**

- (a) Sub grade dump proposed each year at different places. In view of scientific development & conservation of mineral a specific proposal may be furnished to accumulate sub-grade at one place during proposed period.
- (b) Mineral reject has been proposed to stack in new pit which is not matured and mineralisation is continue in depth. Therefore in view of in view of scientific development & conservation of mineral proposed stack of mineral in new pit is not acceptable.
- (c) Storage/Stacking of Sub-grade material/Mineral reject in earmarked area to be described with mRL and area on year to year basis with description of the manner of its disposal.
- (d) Details of Stocks/Dumps of Waste, Sub-grade/mineral rejects etc. is to be given. Retaining wall & garland drain all along the dump & towards Tata's dump of quarry may be proposed.
- (e) Specific proposal for stabilization, reclamation & rehabilitation by plantation, coir matting etc. of existing dumps should also be given year wise in quantified terms.

7. Use of Mineral and Mineral Reject:

- (a) Requirement of end-use industry to be given in terms of physical & chemical composition matching with proposed production of mine. Hence, production of Lumps & fines to be specified with quantity and grade along with its proposed sell to end-use industries.
- (b) Requirement of intermediate industries involved in up-gradation of mineral should be assessed and disposal of Mineral reject/low grade fines/screened fines etc. should be proposed accordingly.

8. "Other":

- (c) Existing manpower both direct and contractual has to be mentioned in the text.
- (d) An organizational chart has to be provided for risk assessment study to whom communication to be made in case of any accident.

9. "Progressive Mine Closure Plan":

- (a) Back filling proposal has not been explained properly. Exhausted area to be backfilled by OB/Waste to be specified with mRL and area on year to year basis with description of the method & manner of disposal of waste. The proposed backfilling bottom mRL, top mRL, quantity of backfilling etc. may be given.
- (b) There are nos. of old quarries exist in the area, therefore a specific proposal may be furnished to rehabilitation of them after detailed exploration
- (c) Updated air, water, noise, ground vibration and soil data with analysis from laboratory done at specified periodicity for last one year to be enclosed.

- (d) There is nos. of stacks of Mineral reject/low grade ore/fines/screened fines lies in the mine. To dispose them, manner of disposal of Mineral reject/low grade ore/fines/screened fines etc. to be specified in terms of blending, beneficiation or selling to intermediate industries involved in up-gradation of mineral.
- (e) 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 given in scheme of mining.

10. FEASIBILITY STUDY REPORT:

Financial analysis is not carried out as per UNFC guidelines. It should be carried out based on real time cost involved. Viability of the project should be analyzed up to the ultimate depth considering following points:

Capital cost, Cash flow forecast, Investment cost, Inflation forecast, Operating cost, Sensitivity studies, RR, IRR, NPV for the project life, cost of operation, Closure cost and Rehabilitation cost etc.

11. Plates:

- (a) The plans and sections submitted do not bear the certificate that --the plans and sections are prepared based on the lease map authenticated by the state government.
- (b) 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 conventions mentioned under MMR 1961.
- (c) Wind direction may show through wind rose diagram in key plan and environmental plan.
- (d) All plans and sections should be signed with date by certified Surveyor, Qualified Person, Mine Manager and Mining Geologist.
- (e) Magnetic Meridian and date of observation of should be given on all relevant plans.

(f) Key Plan/Lease plan:

An authenticated lease plan for the ML area 192.81 ha has not been submitted. Location of lease in key plan is matched with coordinate of lease range given document.

(g) DGPS map:

DGPS map as submitted is not matched with surface plan and key plan.

(h) Surface Plan:

- i. Reclamation & rehabilitation of old quarries have not been shown clearly. Bench mRL of main pit is not visible. mRL of old dumps and quarries have not been depicted.
- ii. Latitude, longitude of all corner pillars may be indicated on the plan.

- iii. Few pillars may be correlated with some permanent ground features giving distance and direction. Different land use may be shown with colour codes.
- iv. Forest & Non forest area, Surface right acquired area etc. should be marked clearly over a separate Lease Plan & Surface plan.

12. Geological Plan & Section:

- a. Geological features like strike, dip, dip direction, mRL of bore holes etc to be marked.
- b. The reserve/resources estimated along the sections not matched with text. Some of the sections are not matched with the Geo. Plan. All the sections should be re-checked as per bore hole data and modified accordingly.
- c. The reserve under G1 & G2 category as shown in the plant not matched with sections. Some more section should be drawn northern part of the lease. Coding system of reserve/resources are not as per guidelines of UNFC, low grade taken in 121 may justified. Colour codes are not clear and missing in index.
- d. A separate BH plan may be submitted showing UNFC boundary (G1, G2 etc.), Proposed BH, Drilled BH, Geology of the area, Section line, Grid, Existing quarry, Safety Zone etc. for better geological understanding.
- e. The direction along which geological section has been prepared to be depicted on geological section.

13. Year wise development plan:

- a. In the development plan, proposed sub-grade dump and mineral stock yard has to be shown. There is crushing & screening unit in south western corner of the lease which is not shown in development plan.
- b. Development section along 190N, existing pit limit & proposed pit limit has not been matched. Section profile mRL not matched with mRL depicted in vertical column. Dumps mRL have not been shown.
- c. Excavation in ore and OB is not clear hence on year wise plans and sections ore and OB may be marked. Show position of faces and bench RLs at the beginning and end of the year distinctly with direction of advance and individual year workings with colour code. Spot levels at sufficient no of places on original surface, in the pit, and at the toe of benches may be shown so as to ascertain the average depth of excavation in a particular bench.

14. Environment plan:

- a. The Environment Plan as prepared should be satisfied the provision as laid down rule 28(5)(b) of MCDR'88. In the Environment plan Environment monitoring stations to be shown.
- b. Surface features of adjacent mine has not been shown in buffer zone.

- c. Environmental monitoring stations have not been marked. 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.

15. Financial Assurance Area Plan:

Area as depicted in text for FA not matched with area given in plan. In the Financial Assurance plan area of each individual land i.e land degradation due to mining activity and processing unit etc at the end of plan period may be shown separately on this plan with highlighted boundaries and different colour codes for FA calculation.

16. Reclamation Plan:

Year wise progress of dumping, dump re-handling, backfilling, afforestation using different colour codes for easy understanding may be shown.

17. Conceptual plan:

There are nos. old quarries existing but their reclamation & rehabilitation have not shown. Conceptual plan may be prepared considering mineralization as revealed from the borehole logs. One longitudinal section may also be submitted. Direction of run off from the area based on surface contours may be shown on the plan and the sections.