



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. MSM/FM/10-ORI/BHU/2019-20

Date: 27.08.2019

सेवामे

Shri Srinibash Sahoo, Managing Partner,
M/s Geetarani Mohanty, House No-96,
Station Road, At/Po- 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. Nil dated 08.08.2019 received on 13.08.2019.
ii) This office letter of even no. dated 13.08.2019.
iii) This office letter of even no. dated 13.08.2019 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 based on site inspection carried out on 13.08.2019 by Shri Dayanand Upadhyay, Senior 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 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 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 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

Copy for kind information and further necessary action to Shri Pradeept Mohapatra, P.O. Box No- 1,
At-Unchabali, Po- Bamebari, Via- Joda, Dist-Keonjhar, Odisha- 758034.

(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:

- I. E-mail, phone & fax no. of lessee has not furnished on cover page. In introduction chapter history of the mines should be described with documentary evidence and marked with annexure.
- II. Page-2, Para-(iii), at present the EC capacity of the mines is 0.864 MTPA, further enhancement of production leads to fresh environmental clearance. Therefore it may be described with documentary evidence like application submitted to MOEF, copy of correspondence and TOR issued if any.
- III. Page-3, reason of modification as furnished should also be reflected with earlier approved production capacity of mines with reference. Para-3.6 is also corrected accordingly.
- IV. Page-4, Para-(f), the quoted for recognized person should be modified in light of provision of rule 15(b) of Minerals (Other than Atomic and Hydro Carbons of Energy Minerals) Concession Rules, 2016.
- V. Page-8, Para-3.2, details of last modification may be described with reason. In review of approved proposal, causes of deviation should be furnished in light of suspension order issued by competent authority with reference.
- VI. Page-13, Para-3.5, it is mentioned that order of suspension of mining operation was issued under rule 13(1) of MCDR 1988, it should be rechecked and corrected. Page-14, last para is not correctly described in reference to partial revocation and annexure number is also not correctly furnished.
- VII. 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.
- VIII. Sequence of paragraph and its numbering should be covered as per IBM Manual Appraisal MP 2014.
- IX. All the annexure to be properly indexed/ numbered/ paged and signed by qualified person. All the certificates should bear dated signature.

GEOLOGY:

- I. Page-20, Para-(c), detailed description of geology of the lease area such as shape and size of the mineral/ore deposit, disposition of various litho-units indicating structural features etc. to be given.
- II. Page-22, Para-(ii), it has been described that total 88 nos. of bore holes have been drilled in the lease area however intimation of complete bore holes drilled has not been submitted under erstwhile form-J. The complete information of bore hole logs under form-K has not been furnished. Some of the bore holes ID are also miss-matched.
- III. Page-17, details of total sample collected and number of sample analysis from private lab and from NABL accredited/Government Laboratory should be described and bore hole wise analysis report to be enclosed in annexure.
- IV. Page-23, the area furnished under G3 level of exploration is 10.954 ha however in geological plan it is shown under G4 level . It should be re-checked and corrected accordingly.
- V. Page 25: The complete lease area should be proposed to cover under exploration under G1 level upto end of mineralization. The proposal of exploration to be given in following format:

Sl.No	Year	BH No	Northing	Easting	Collar RL	Core/RC/DTH	Metage	Inclination	Forest/Non-Forest/ diverted Forest	Surface Right/ Non-Surface	Purpose of BH
1											
2											

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.

- VI. The details like potentially mineralized area and its extent (coordinate in WGS 84), potentially mineralized area explored (in forest and non-forest area, Govt. land, Pvt. land etc.), remaining area, proposal of exploration to explore remaining potentially mineralized area to be given with justification of adequacy.
- VII. The Geological boundaries of exploration limit i.e. G1/G2/G3 etc. are not marked as per Minerals Evidence of Mineral Contents Rules 2015. Accordingly, the reserves/resource estimation calculation, geological plan and Sections need to be revised.
- VIII. Page-31-36, the reserve and resources is not furnished as per Minerals Evidence of Mineral Contents Rules 2015. The estimation of OB/intercalated waste has not been furnished in cross-sections. Geological information at the end of the bore holes not furnished and UPL is not correctly drawn considering the mineralization blocked under high tension line.
- IX. The blocked mineral resources under high tension line taking by lateral influence of 50 m each side are considered under mineable reserve 111 and 122 category which is not correct. Therefore reserve and resources should be updated as discussed during inspection and all the cross sections should be revised accordingly.
- X. The nos. of samples analyzed from NABL accredited laboratory or Government laboratory have not 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.
- XI. Reporting of Mineral Resources in the format prescribed in Part IV-A of Minerals (Evidence of Mineral Contents) Rules, 2015 to be submitted.

MINING:

- I. Page-42, existing method of mining has not been described properly. The present status of lease alongwith statutory clearances should be furnished.

Name of pit	Location	Length	Breadth	Depth	Top mRL	Bottom mRL	No. of benches in ore/No. of benches in OB	Pit slope	Area backfilled	Area reclaimed & rehabilitated

- II. In reason of modification of review of mining plan it is mentioned that proposal of parking plaza is envisaged as imposed by NEERI. Therefore its location alongwith co-ordinates should be furnished in text.
- III. Page 43, the sub grade should be replaced with mineral reject. The average grade of mineral reject should be furnished. All the sub grade dumps should be specified with their quantity and grade and certified by surveyor.
- IV. Page-45, the bulk density of mineral reject and percentage of recovery of saleable/usable ore with ROM to be furnished with documentary evidence.
- V. Handling of mineral reject near pillar 14/1 and 7 have not been described in text with average grade of ore and total quantity will be handled.
- VI. Development sections drawn are not in the line of development plan. The UPL should be revised considering the lateral influence 50m each side of high tension line passes through the lease area. Adequate precaution should be proposed near the electric line (HT).
- VII. The quantity of Sub-grade to be generated during conceptual period and its utilization and future planning for beneficiation may be given.
- VIII. Conceptual mining plan, cumulative waste generation and top soil generation and protective measures have not been described properly.

Mine Drainage:

It has been observed that a substantial amount of rain water supposed to be passed from the lease area. Hence, a mine drainage plan to be submitted showing flow direction of the water, location final discharge, arrange of arresting of solid waste etc.

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

- I. The existing mineral reject dumps should be furnished below alongwith analysis report.

Name of Dump	Location (Grid)	Length(m)	Width(m)	Area Occupied	Total volume (cu.m)	Total quantity(T)	Grade

- II. The bulk density of mineral reject is considered 2.5 t/cu.m in estimation of reserve and resource while in existing old mineral reject dump it is considered 2.0 t/cu.m which is contradictory.
- III. 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.
- IV. 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

- V. 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.
- VI. 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:

- I. Page-84 & 89, existing land use pattern and proposed as furnished in table is not matched with final table of FA depicted at page no.-109, Para-8.6. The area considered under parking plaza in FA table is not shown in FA and specific area is not furnished. Amount of financial assurance should be calculated as per rule 27(1) of MCDR-2017 and submitted accordingly.
- II. Page-85-88, monitoring station of air, noise and water should be described in text and their locations furnished in tabular form.
- III. Page-92, human settlement within lease area has not been described. Page-96, socio-economics condition of the area should be described with total population, literacy percentage male female ratio etc.
- IV. Updated air, water, noise, ground vibration and soil data with analysis from laboratory done at specified periodicity to be enclosed.
- V. 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.
- VI. 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.
- VII. Year wise plantation covering number of saplings to be planted, location and area covered may be furnished.

FEASIBILITY STUDY REPORT:

Financial analysis is not carried out as per UNFC guidelines. It should be carried out based on real time cost. 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.

PLATES:

- I. All the plan and sections should be signed with date by certified surveyor, qualified person, mines manager and mining geologist.
- II. 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.
- III. Wind direction may show through wind rose diagram in key plan and environmental plan. Approach road to the ML to be shown.
- IV. 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.
- V. High tension line alongwith location of poles should be clearly marked on relevant plans.
- VI. At some places the colour codes as furnished in plans are not matched with index and some of the index is missing.

Surface Plan: Few pillars may be correlated with some permanent ground features giving distance and direction. 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.

Geological Plan & Section: Data related to strike, dip, dip-direction etc. shown clearly. UNFC boundaries of G1, G2.. explored area should be shown in plan in place of UNFC codes. 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.

Development plan & Section: In development section UPL should be revised considering influence of high tension line passes through the lease area. Direction of advance to be shown in plan and section. Existing and proposed RL of benches/dumps should be mention clearly in development plan and section. Location of proposed screen plant, magazine etc to be shown in plan. Retaining wall and garland should be marked clearly yearwise with colour codes. UPL should be shown in red colour.

Environment plan:

- i. The Environment Plan as prepared should be satisfy the provision as laid down rule 32(5) (b) of MCDR2017.
- ii. 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.
- iii. Contours should be shown in core zone.

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.