



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/34-ORI/BHU/2019-20

दिनांक / Date: 19.11.2019

To

✓
Shri Neeraj Akhoury,
Nominated Owner,
Dungri Limestone Mines,
M/s Bargarh Cement Works
of ACC Limited, Post-D.L.Q.
Colony Campus, Dist-Bargarh,
State-Odisha, Pin-768052.

Sub: Review of Mining Plan of Dungri Limestone Mine over an area of 428.906 ha in Bargarh district of Odisha of M/s Bargarh Cement Works of ACC Limited submitted under Rule-17 (2) of MCR, 2016.

Ref:- i) Your letter no. GEOMINING/BARGARH/002 dated 31.10.2019 received on 05.11.2019.
ii) This office letter of even no. dated 05.11.2019.
iii) This office letter of even no. dated 05.11.2019 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.

Sir,

This has reference to the letters cited above on the subject. The draft Review of Mining Plan along with Progressive Mine Closure Plan has been examined in this office based on earlier site inspection carried out on 17.09.2019 by Shri Ramkishan R, Sr. Assistant Controller of Mines and Shri Sudip Ranjan 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-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 27 of MCDR' 2017 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 modified 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 yours faithfully,


(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

Copy for kind information and necessary action to:

1. Shri Jagannath Behera and Shri Sujoy Kundu, Qualified Person, Dungri Limestone Mines, M/s ACC Limited, Post-D.L.Q. Colony Campus, Dist-Bargarh, State-Odisha, Pin-768052.

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

Scrutiny comment on Review of Mining Plan including PMCP in respect of Dungri Limestone Quarry Mine of M/s Bargarh cement Works of ACC limited over an area of 428.906 Ha in Bargarh District, 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. CONSENT LETTER/ UNDERTAKING/ CERTIFICATE FROM THE APPLICANT have not been submitted as per the format specified in IBM appraisal of MP 2014. Also certificate from Qualified Persons as per the format specified in IBM appraisal of MP 2014 has not been submitted. Need to do necessary corrections.
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". Necessary corrections to be done at all places in text, table and plates.
4. In the introduction chapter the sequence of execution and transfer of lease along with lease area and land schedules may be described in detail along with necessary annexures. The land schedules of non-forest area over lease area of 428.906 Ha and 448.392 Ha are different. Need to recheck and furnish the correct information with documentary evidence.
5. 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/ modified mining plan/FMCP etc. along with lease area/area should be given in tabulated format.

Sl. No	Mining Plan / Review of Mining Plan/ Modified Mining plan/ FMCP etc.	Lease area/ area (in Ha)	Submitted Under (Rule Reference)	Approval Letter No. & Date	Period	Valid up to

6. In Para 3.3, review of earlier approved proposal in respect of exploration, excavation, reclamation, environment management etc. should be furnished only for the period 2018-19. ROM production should include mineral reject part of ROM. Reason for deviation should be justified. The proposal figures of ROM production and achievement in 2018-19 should be rechecked and corrected.
7. In Para 3.3, in the review the achievement of the proposed rain water harvesting structure during the year 2019-20 till date only should be furnished along with reason for deviations only. Further, in remarks column it should be furnished that it should be completed by 2019-20. Need to do necessary corrections.

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

8. The chemical analysis shown in table 18, 19, 20, 21 & 22 should be carried out from third party NABL accredited laboratory and the analysis report from the NABL laboratory should be submitted. Need to do necessary correction.
9. In table 23, it is not mentioned whether 10% of check samples have been analyzed from NABL laboratory or not for the year 2004, 2015 & 2017. The NABL analysis report of the check samples for the year 2015 and 2017 have not been enclosed. Further, in table 27 (A), it is not mentioned the percentage of total samples that have been analyzed from NABL accredited laboratory. The NABL reports should also be furnished.
10. The lease area explored under different category of UNFC norms as shown in table no 38 is incorrect as the influence of proposed borehole under future exploration program has also been taken into consideration which is incorrect. The area under G1 and G2 should be recalculated as per the provision of Part II point no.4 and part III of the Minerals (Evidence of Mineral Contents) Rules, 2015 (MEMC Rules, 2015). For example proposed borehole no C/N28/PBH-13. Further, G1 and G2 boundary demarcation is also incorrect. The justification for area considered for G1/G2/G3/unexplored area etc. has not been furnished as per the provision of MEMC Rules'2015.

11. In Para 1 (i), future exploration proposal should be modified to the extent that area that falls under G2 category and unexplored area after complying the point no.9, should be converted to G1 level of exploration. The depth of proposed boreholes should be up to 300 meters or up to discontinuance of ore body, whichever is earlier. Further, the exploration proposal is inadequate to the extent mentioned below.

- a) Boreholes at an interval of 200m along the section lines complying 200x200m grid interval for G1 level of exploration have not been proposed. For example at section at ML N28, ML N26 etc.
- b) Further, few boreholes have been terminated without intersecting the ore body at depth and additional boreholes have not been proposed for the same. For example bore hole no C/N28/2 at section at ML N28
- c) It is observed in section ML N28, ML N26 etc., that ore body has been terminated at the fault plane but its extension in the other side of the fault plane have not been proved through deeper boreholes. Boreholes have not been proposed.
- d) Few boreholes at pit bottom should be proposed to know the continuity of bottom lithology at depth
- e) The depth of the proposed boreholes should be modified as mentioned above.

The proposal for exploration should be over the period of two years only i.e. 2020-21 & 2021-22.

As per MEMC Rules 2015, check analysis of at least 10% of samples may be analyzed from third party NABL accredited/or department of science & technology (DST) / BIS recognized laboratories or government laboratories for assessing the acceptable levels of accuracy. Accordingly, the proposal should be given under future exploration programme.

In table no 29, the borehole coordinate (Northing & Easting) have not been furnished in UTM coordinate. The depth of the proposed boreholes should be rechecked and corrected as mentioned in scrutiny point 10. Need to submit the UTM coordinate of the proposed boreholes.

12. Justification of recovery factor based on time series data has not been submitted. The reference of Bulk density test report has not been mentioned and should be corrected. Necessary corrections to be made at all relevant places.
13. The HG, MG, MR of limestone has not been properly defined in terms of chemical constituents i.e., CaO and MgO only. The bulk density test report for OB, IB, HG, MG and MR from NABL accredited laboratory has not been submitted.
14. UPL have not been shown in all geological sections. Need to do necessary correction.
15. The average grade of resource under G1 and G2 in table no 37 and 39 have not been furnished. Further, in table 39, the range of CaO% in MR has not been submitted. Further, in table 39, a final column of combined grade of reserve and resource should be submitted. Need to do necessary corrections.
16. In table no. 38, the area explored under G1, G2 is incorrect. In the remarks column it has been mentioned that the entire lease area has been explored in G1 and G2 level of UNFC is incorrect and should be corrected.
17. Reserves and Resources have not been estimated as per the provision of MEMC Rules 2015. Further, the resource estimation has to be done based on last updated survey. Detail calculation of section wise reserves and resources based on last updated survey and updating the borehole information by cross sectional method for various categories of UNFC have not been furnished showing cross-sectional area, length of influence, volume, bulk density and tonnage has not been furnished. 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 summary of ore and mineral reject along with grade under various level of UNFC should be furnished.
18. Justification of UNFC codes furnished is inadequate should be described in detail. Need to do necessary corrections.

PART-A: (2). MINING:

19. Refer table 44, in which dump-4 is mentioned as waste dump but the chemical analysis report from NABL accredited laboratory attached as annexure XIII(A) does not specify the sample location as waste dump-4, type of sample and also the samples have not been drawn/collected by third party NABL accredited laboratory. Need to draw/collect representative samples from dump-4 by third party NABL accredited and also analyzed by third part NABL accredited laboratory. Need to do the needful.
20. The different bench heights considered have not been justified w.r.t lithology thickness of the limestone. Extraction sequence of different grade of limestone during mining should be elaborated in detail. Need to do necessary correction.
21. The bench configuration in Ore and waste should be distinguished. The same should be reflected in development plans and sections. Further, the calculation part for excavation should also be rechecked and corrected. Need to do necessary corrections.
22. In table 51, a column showing stripping ratio in t/cum should be inserted. Need to do necessary correction.
23. In reference to point no 19, in table 53 (A) to 53(E), the bench heights should be rechecked and furnished. Need to do necessary correction.
24. Life of mine should be recalculated based on re-estimated resources as mentioned in point no.16

3.0 MINE DRAINAGE:

25. The proposal for rain water harvesting has already been approved in the earlier approved mining plan for 2019-20 and therefore proposal submitted should be omitted. The proposed rain water harvesting structure and its allied activities should be completed by 2019-20 only. Need to do necessary corrections at all relevant places in the document.
26. The details regarding the water management of the lease area considering the above proposed rain water harvesting structures to be completed by 2019-20 and complying specific conditions mentioned in environment clearance should be elaborated in detail in the next five years plan period. This should be depicted in environment plan. Need to do needful.

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

27. The nature/ type of mineral reject and waste material have not been described or classified.
28. In table 69, the insitu quantity of waste (in cum) that is required to be backfilled should only be mentioned. The same insitu quantity of waste generated and proposed for backfilling should also be mentioned in year wise reclamation proposal from 2021-22 to 20224-25. Need to do necessary corrections at all relevant places.
29. 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.

PROCESSING OF ROM AND MINERAL REJECTS:

30. The information furnished in para 5(e), should be elaborated in detail in para 6 (a) & (b) including in flow chart. Need to do necessary corrections.
31. In para 6(g), source of water have not been furnished. Need to do necessary corrections.

PROGRESSIVE MINE CLOSURE PLAN:

32. 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.

33. 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.
34. The plantation is proposed in the unexplored/virgin area. The entire plantation proposal should be rechecked and reviewed for its location suitability and accordingly the proposal should be modified in text and relevant plates.
35. In FA table the different heads should be kept as per the format specified in IBM manual appraisal 2014. The area considered as fully reclaimed and rehabilitated under mining should be rechecked and corrected. Therefore, net area considered for FA calculation should be rechecked and corrected and equivalent financial assurance to be submitted. The area under different heads of FA table should be properly shown in different hatching with present area and additional area in FA plan.

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.
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 and wind rose diagram has not been shown.
4. 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 in true color.
5. **SURFACE PLAN:**
 - i. The index of surface right area shown should be distinct from index of safety zone. The Surface Plan should be prepared to satisfy the provision as laid down rule 32 (1) (a) of MCDR'2017. The DGPS surveyed latitude-longitude and UTM coordinates of all the boundary pillars have not been furnished in tabulated format.
 - ii. The location of the water reservoir shown should be rechecked and corrected. Need to do necessary corrections at all relevant plates.
6. **GEOLOGICAL PLAN & SECTION:**
 - (i) The redefined UNFC boundaries to be shown in Geological Plan and sections.
 - (ii) Cross section lines with nomenclature have not been shown on the geological plan.
 - (iii) the Geological Plan should be prepared to satisfy the provision as laid down rule 32 (1) (b), (c) and (d) of MCDR'2017
 - (iv) Index of different grade of limestone do not corroborate with the index shown in plan and sections. Need to recheck and correct at relevant places.
 - (v) Proposed boreholes should be shown in plan and sections. The proposed borehole should be shown in dotted lines in geological sections.
 - (vi) The borehole log do not corroborate with geological sections. The lithology shown in geological plan do not corroborate with lithology shown in section.
 - (vii) Scientific correlation of geological section has not been done as per the provision of MEMC, Rules 2015.
 - (viii) In Geological plan, some of the areas have been shown as blank. In those areas, geology of the area should be shown.
 - (ix) UNFC codes, UPL should be shown in Geological sections.

- (x) The UTM coordinate reference in the -x-axis of the geological section have not been furnished.

7. DEVELOPMENT PLAN & SECTION:

- (i) Development plan and sections should be revised based on updated geological map and sections. Index of the UPL shown in plan and section and those shown in index is different.
- (ii) The dotted lines in black color are not shown in index and its relevance on plan is not justified.
- (iii) The proposed and existing bench mRL to be shown clearly over year wise development plan and sections.
- (iv) Geological information (lithology) to be furnished on development plan and sections. Plan and section should be drawn on same scale.
- (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.

8. ENVIRONMENT PLAN:

- i. The environment plan has not been prepared as per the provision laid down in rule 32 (5) (b) of MCDR'2017.
- ii. The contour interval should not be more than 5meters in the lease area and up to 60m beyond the lease boundary. Contours values should visible and up to 60 m beyond the lease boundary.

9. RECLAMATION PLAN:

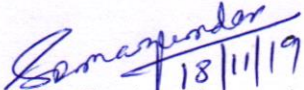
Existing and proposed protective measures and plantation should be shown in different colors along all waste dumps and mineral reject dumps. Index of safety zone boundary and surface right area should have distinct color.

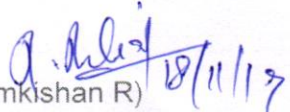
10. FINANCIAL ASSURANCE AREA PLAN:

The area degraded due to mining and allied activity and waste dump sites to be considered in FA calculation. It should be re-calculated complying the parameters mentioned in point no.37 and submitted accordingly. The existing area and additional area under different heads should be shown properly under different coloured hatching.

ANNEXURES:

1. 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.
2. Indexing of plates with scale have not been submitted.
3. 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.
4. Copy of bank guarantee has not been enclosed. Photographs of boundary pillars should be enclosed.
5. Copies of Form J and Form K of all drilled boreholes have not been submitted.
6. The chemical analysis results of borehole samples from NABL accredited laboratory have not been submitted.
7. NABL accreditation certificate of the laboratory has not been furnished.
8. Indexing of borehole logs with page numbers have not been done in sequence


(Sudip Ranjan Mazumdar)
Senior Mining Geologist


(Ramkishan R)
Senior Asst. Controller of Mines