



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/43-ORI/BHU/2017-18

Date: 14.02.2018

To

✓ Shri Prashant Kumar Ahluwalia,
M/s Kaypee Enterprises,
P.B NO. 3, In front of MMTC weight Bridge,
At/P.O- Barbil, Odisha – 758035

Sub: Approval of modification of Review of Mining Plan of Thakurani Iron Ore Mine along with Progressive Mine Closure Plan (PMCP), over an area of 228.04 ha in Keonjhar district of Odisha State, submitted by M/s Kaypee Enterprises under Rule 17(3) of MCR, 2016.

Ref: - i) Your letter No. KP/TK/IBM/1058 dated 29.01.2018.
ii) This office letter of even no. dated 02.02.2018.
iii) This office letter of even no. dated 02.02.2018 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.

Sir,

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 earlier site inspection carried out on 10.01.2018 by Shri Dilip Jain, Junior Mining Geologist. 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.

Yours faithfully,


14/02/18
(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional controller of Mines

Scrutiny comment on Modification of Mining Plan including PMCP in respect of THAKURANI Iron Ore Mine of M/s KAYPEE in Keonjhar district of Odisha State.

1. General:

1. On cover page Mining Lease Number/TC Number/Lease Number if any, along with registration number as allocated by IBM under rule 45 of MCDR, 2017 needs to be mentioned. Further, address, e-mail, phone number, fax number of the lessee may be furnished on cover page. Further, summery of the proposals to be given before the introduction page.
2. The coordinate boundary pillars may also be given in UTM. Further, UTM or WGS84 grid as per DGPS map may also be super-imposed in relevant plans for better comprehension.
3. The details of violation pointed out by IBM and its compliance is not given for the review period. Check and rectify.
4. The details of the lease area (forest and non-forest etc.) to be given as per table given in the IBM manual on appraisal of mining plan 2014.
5. CCOM circular number 2/2010 and its addendum regarding geo-reference mining lease map and ML boundary pillars to be implemented.

2. Geology and Exploration:

6. BH wise information of drilled BH to be given in tabulated form indicating Year, Collar coordinate, collar RL, type (Core/DTH/RC), section number, diameter, spacing, inclination, depth, whether mineralized or non-mineralized etc.
7. Page 20: 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. Accordingly, BH wise sample details submitted to above laboratory to be given in tabulated form indicating BH number, original sample number, duplicate sample number, assay of original sample and duplicate sample along with scattered plot (graphical representation) showing R2 value.
8. From geological plan and section it is observed that some of the drilled BH were terminated in Ore and not drilled up to the optimum depth of the mineralization. Hence, to explore the lease area depth ward infill exploratory drilling may be proposed up to the depth of the mineralisation.
9. Page 21: The details of exploration to be given in accordance to the land schedule i.e. forest/non-forest/diverted forest/surface right area etc. The details of individual proposed BH 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 | 2018-19 | PBH 01 | | | | | | | | | |
| 2 | 2018-19 | PBH02 | | | | | | | | | |
| Total | | | | | | Total BH | Total mts | | | | |

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. Same to be depicted on the Geological plan.

10. It is mentioned that a total of 190 BH have been drilled in lease area, however, only 184 BH have been shown on geological plan. Check and rectify. Further, the RC and Core drilling to be shown with different color code.
11. The total resource has been enhanced from 71.798 million tonnes (as per last approved document) to 97.77 million tonnes. The justification to be given. Further, average grade of the deposit to be mentioned for reserve and resource, instead of +55% Fe or 45 to 55%Fe. The grade to ascertain from drilled BH data.

12. Proposal of the exploration given seems to be inadequate to explore entire lease area under G1 level of exploration. Accordingly proposal of the exploration may be revised to explore entire potentially mineralized area under G1 level of exploration as per rule 12(4) MCDR, 2017.
13. The level of the exploration to be depicted as per the M(EMC) rule 2015. Accordingly, table presented on page 19 showing area under different level of exploration to be revised.

MINING:

14. The period of the lease going to be expire by 31/03/2020. To enhance the production of Iron Ore from 5.5 to 13.00 million tonnes would require forest clearance, environment clearance and other statutory clearances. It seems that within the proposed period, it would not be feasible to get all the statutory clearances well within time i.e. within two months. Hence, abrupt enhance of production from 5.50 to 13.00 million tonnes seems to be not feasible. Accordingly proposal of the production may be modified and furnish justification for enhancement, if any.
15. The layout of the haul road for present and future excavation proposal should be properly addressed in line with safe movement of fleet of the machinery.
16. The stack yard has been proposed in DN pit for the year 2018-19 and 2019-20. The stacking of ore in DN pit and development of the DN pit simultaneous is not allowed in the interest of systematic and scientific development of the mine. Further, the proposed site of stacking is within the UPL and should be outside of the UPL.
17. Page 35: At places the grid location of the dump mentioned in table does not match with the grid value mentioned in surface plan. Further, the direction of advancement mentioned at different places is not matching with each other. Check and rectify.
18. The details of existing dumps given should also include the design capacity of dumps and waste material dumped and remaining quantity of waste dumping etc.
19. **Mine Drainage:** Form text it is 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 catchment area, flow direction of the water, location final discharge, arrange of arresting of solid waste etc.
20. The details of water drawn from external source and arrangement of its recycling may be given for domestic and industrial purpose. Further, a proposal for settling pond is to be given and all the rain water from the waste dumps to be diverted to the settling pond.

4. Stacking of Mineral Reject/Sub-grade and Disposal of Waste:

21. Details existing and proposed retaining wall, garland drain, settling tank etc. to be given with their location along with proposal of maintenance of all existing retaining wall, garland drain, settling pond and check dam to be given.
22. Further, Build-up of dumps from year to year to be given in tabulated manner considering designed capacity of dumps, bottom and top mRL of individual terrace, dump slope, individual terrace height and slope.
23. From dump plan and section it is observed that the height of the dump would be around 100 mts and moreover the dump is proposed on the hill slope. A proposal of scientific study for dumping upto such height form the institute of repute to be given and dumping of waste will only be done as per the recommendation of the study. Such proposal of scientific study to be given.

6. Use of Mineral and Mineral Reject:

24. The physical specification as described by end-user industry to be given.

7. Processing of ROM and Mineral Reject:

25. Para G: The details of water requirement year wise for domestic and industrial purpose and sources of supply of water, disposal of water and extent of recycling. Water balance chart may be given.

8. Progressive Mine Closure Plan:

26. The current base line information to be submitted in respect of the water regime, noise, air etc. instead of the year 2008. The lease is expiring in 31st March 2020, there for PMCP submitted in instant document should in line with the FMCP. Proposal of plantation and coir matting etc may be given for the matured dump terraces of the year 2018-19 and 2019-20. Gap filling plantation to be given.
27. Page 87: The area of afforestation, number of saplings, cumulative number of plants, proposed cost for watch and care etc. to mentioned under dump management. Further, proposal of plantation over workout benches to be given in the first year of the proposal and proposal of maintained to be given for second year.
28. Page 87: An area of around 1.0 Ha is mentioned as waste land, same to be depicted on relevant plan and proposal of rehabilitation to be given in the first year proposal. Proposal of maintained to be given for second year.
29. The report of the environment monitoring has to enclosed and reference of same to be mentioned. Updated air, water, noise, ground vibration and soil data with analysis from laboratory done periodicity for last one year to be enclosed.
30. Provision of sump to be given and as far as possible all the rain water of catchment area to be diverted to that sump. If, possible proposal of ground water recharge structure may be given.
31. The location and schedule of environment protective measure to be given in text. It is advised that most of the plantation work to be completed in year 2018-19 only. The year 2019-20 should be for post care maintenance only. Accordingly proposal may be revised.
32. Para 10, Page 92: The rule position for PMCP mentioned rule 32 of MCDR, 2017 to be corrected as rule 23 of MCDR, 2017.

10. Feasibility Study Report

33. Feasibility assessment report should be prepared and submitted as per UNFC guideline considering all technical and economic parameters along with guideline as per CCOM circular 1/2006 and 4/2009 considering all technical, financial and economic parameters described in UNFC guideline and or as per parameter described in M(EMC) rule 2015.
34. The economic evaluation has not carried out properly. Cost of production (COP), Cost-Benefit analysis and financial appraisal needs to be carried out based on real time data.

8. Plates:

35. General: Relevant plans and sections should be signed with date by certified Surveyor, Qualified Person, Mine Manager and Mining Geologist. Further, a 25 cm scale suitably sub-divided should be depicted on all the plans and sections.
36. Magnetic Meridian and date of observation of should be given on all relevant plans. Further, the UPL should be shown in red colour in all relevant plans and sections.
37. Key Plan: The approach road to lease area has not shown. Further, Authenticated lease plan to be submitted.
38. **Surface Plan:** Forest/non-forest/diverted forest/private land/SR area to be shown clearly. Some area between WD 10 and Quarry -D, which has been degraded have not been depicted in plan. UTM coordinate as per DGPS map to be mentioned in plan. Further, few pillars may be correlated with some permanent ground features giving distance and direction.
39. **Geological Plan & Section:** Geological plan does not illustrate geological feature of the area such as orientation of ore zone, structural information like strike, dip, dip-direction etc. All these information should be reflected on geological plan and section. Check and rectify. Further, the index in geological plan and section should be same
40. The depth of the proposed exploratory and drilled BH to be mention at the end of the BH. From section it is observed that many of drilled BH has been shown above the ground profile. Justification to be given and needs to Check and rectify. The color code for section line to be change as it is similar to the grid line.

41. UNFC Plan: The level of exploration i.e. G1, G2 etc. to be shown with unique color code and non-mineralized area, mineralized area within the G1, G2 boundary may be shown with different hatch. Accordingly, geological plan may be revised.
42. **Development plan & Section:** The layout of the haul road for present and future workings has not been depicted on the plan and sections. Further, existing position of waste dump and proposed dump height is to be marked with mRL.
43. **Environment plan:** The Environment Plan as prepared should satisfy the provision as laid down rule 32(5) (b) of MCDR2017. Surface features of adjacent mine has not been shown in core and buffer zone.
44. **Reclamation plan:** The color code for existing and proposed feature should be different. All the proposed features in tabulated manner may be depicted on the plan. Accordingly, reclamation plan to be revised.
45. **Financial Assurance Area Plan:** The amount of financial assurance calculated is not as per rule 27(1) of MCDR-2017. In current document an area of around 101.133 Ha. has been considered for FA, however, same is estimated around 106.00 Ha. The area degraded due to mining and allied activity to be considered in FA calculation. It should be re-calculated and submitted accordingly.

9. Enclosures:

46. All the annexure to be properly numbered/paged and relevant annexure to be signed by Geologist/surveyor/RQP etc. It is observed that many of the annexures are not legible. A legible copy of same to be enclosed.
47. The company is a partnership firm, hence, a list of all the partners to be enclosed. Signature and address proof of managing partner and QP to be enclosed.
48. Certificate from the lessee should also include: The information furnished in the Modification of Mining Plan and Progressive Mine Closure Plan is true and correct to the best of my knowledge and records.
49. It is observed that hand written BH logs have been submitted. Same needs to be digitized as per form J of MCDR, 2017. Further, Copy of form I and J (year wise) as per MCDR, 2017 to be enclosed for all the drilled BH for ready and future reference as per Rule 47 and 48 of MCDR, 2017. The same should be signed by the Geologist appointed under MCDR, 2017.
50. The documentary evidence i.r.o. bulk density considered for Iron ore and mineral reject to be enclosed.
51. A separate undertaking may be given that FMCP will be submitted as per rule 24 of MCDR, 2017 i.e two years prior to the proposed closure of the mine.

In view of above, wherever necessary correction required to be made.

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