



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. FMCP/FM/13-ORI/BHU/2018-19

Date: 23.04.2018

To

Shri Sidhartha Mohanty, Director,
M/s B C Mohanty & Sons Pvt. Ltd.
Raja Bagicha, Opposite SBI,
Jhanjirimangala, Cuttack,
Odisha – 753009

Sub: Approval of Final Mine Closure Plan of Kamarda Chromite Mine over an area of 228.04 ha in Jajpur district of Odisha State, submitted by M/s B C Mohanty & Sons Pvt. Ltd under Rule 24 of MCDR, 2017.

Ref: - i) Your letter No. 410/2017-18 dated 23.03.2018.
ii) This office letter of even no. dated 03.04.2018.
iii) This office letter of even no. dated 03.04.2018 addressed to Director of Mines, Government of Odisha copy endorsed to you.

Sir,

This has reference to the letter cited above on the subject. The draft of Final Mine Closure Plan (FMCP) has been examined in this office based on site inspection carried out on 08.04.2018 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 Final Mine Closure 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 in Auto CAD compatible format or JPG format in resolution of 100x100 pixels on same CD)** of the Final Mine Closure 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 Final Mine Closure 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 Final Mine Closure Plan. It may be noted that no extension of time in this regard will be entertained and the Final Mine Closure 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

**SCRUTINY COMMENTS ON FMCP DOCUMENT IN RESPECT OF THE KAMARDA CHROMITE MINES OF M/S
B.C. MOHANTY & SONS PVT. LIMITED OVER AN AREA OF 107.24 HA IN JAJPUR DISTRICT OF ODISHA
STATE SUBMITTED UNDER RULE 21(4) OF MCDR, 2017.**

(For the Leases expiring by 31/03/2020)

1. **GENERAL:** All the information for cover page mentioned in the guideline of “ IBM Manual for appraisal of Final Mine Closure plan, 2018” (hereinafter referred as format) to be mentioned like lease number/TC number, lease period, category of mine, phone, fax and e-mail of lessee, qualification of QP etc. Hence, necessary information to be provided on cover page as specified in format.
2. The compliance of conditions imposed while execution of lease deed approval of mining plan, MOEF, SPCB may be submitted with remarks if any deficiency observed. The relevant document may be attached as annexure.
3. It is observed at many places that the information has not been given as per guideline/format. Tables as specified in the format have been altered. Hence, all the tables should be as per the format and if any, additional table is required may be given with proper reference.
4. It is observed that summary of proposal is not matching at places with the proposal made in RMP. Summary of proposal should be match invariably with the proposals. Hence necessary correction to be done at relevant places in line with proposal of RMP.
5. There is no proposal of reclamation for the year 2018-20, however, an area of 0.284 Ha is mentioned under proposal. Mineral reject generation quantity has not been mentioned. The position of reserve and resource to be given as on 01/04/2018. Further, the balance reserve/resources as on 01/04/2018 has not been furnished separately for forest and non-forest area as per guidelines.
6. The quantity shown as clean ore is actually salable ore, thus, in remark “salable ore should be mentioned”. Further, Para 3.13: All the boundary pillars should also be given in UTM for better referencing. UTM grid may also be depicted on the plan and sections. Para 4.1 and 4.2: Information has not been furnished as per the guideline. Check and rectify.
7. **Review of earlier approved proposal:** It is observed that some of the information has not been furnished as per the approved proposal (like rainwater harvesting pits). Hence, all the information of proposal to be submitted as per the approved document of MP/RMP. The information in respect of the achievement to be furnished along with documentary evidence. The updated information i.e. upto 31/03/2018 to be furnished for the year 2017-18.
8. Para-5.21: Plantation proposed and carried out has not been furnished separately in virgin area, backfilled area, dumps, ultimate benches etc. Para-5.22, grid value of settlings ponds is not furnished.
9. Para 2.24 to 5.27: The information on environment monitoring data to be furnished along with location of monitoring station, frequency, prescribed limits of the parameter and actual analysis of the data. Further, area mentioned on page 18 for area put to use as on 01.04.2018 is not matching with the approved document. Check and rectify.
10. **Geology and Exploration:** Para-6.3- The direction of the strata from older to younger to be mentioned. Description of individual litho unit to be given. Para 6.5.2: The scale of exploration and area covered to be mentioned in the table. It is mentioned that a total of 404 core samples have been collected and analyzed. However, BH wise details of same have not been furnished. As discussed during filed visit, same to be furnished. Further, in para 6.6.1, information furnished is incorrect and to be furnished in respect of the lease area (strike length etc.). Explored depth/mRL to be mentioned, threshold value etc.
11. Para 6.6.2: All the information to be furnished as per the prescribed table including top soil, waste (OB/SB/IB) area within UPL etc. Further, para 6.6.3, reference of feasibility study report to be mentioned. Backup estimation calculation of mineral blocked to be given in the feasibility study report. Para 6.6.5: Justification for economic axis to be given as MEMC rule 2015.

12. Para 6.5.3: As per format 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 to be given and 10% of total samples to be analyzed from NABL accredited/Government Laboratory.
13. Compliance of rule 21(4A) of MCDR, 2017 to be ensure and accordingly proposal of exploration to be revised.
14. Para 6.11: It is to propose that all the cores/samples etc will be stored properly for future use and will not be destroyed prior approval of the competent authority. Brief details regarding preservation of cores should be given. The cores should be stored serially with suitable indexing and cataloguing and shall insure the submission of cores to GSI. The proposal of storage location of core/samples to be given and mentioned in text along with showing on the plan.
15. **Mining:** Page 43- The grade of clean and mineral reject to be mentioned. Para 7.5: The details of all the machineries as furnished in approved RMP to be given in the para. Extent of mechanization to be given separately for contractual and lessee.
16. **Mine Drainage:** Para 8.1.1-Minimum and maximum depth of water table in the form of mRL based on observations from nearby wells and water bodies to be indicate.
17. A mine drainage plan to be submitted showing catchment area, flow direction of the water, location of final discharge, arrangement for arresting of solid waste etc. showing retaining wall, garland drain, settling tank, check dam etc. further, all the surface runoff should be treated through ETP. Accordingly proposal to be made.
18. **Stacking of top soil, MR, Fines, Tailing/slime and disposal of waste:** The chapter has not been prepared as per the format. All the tables as indicated in the format to be submitted. Hence, complete recast of the chapter is required.
19. Para-9.1: The details of all the waste dump, Mineral reject dumps, soil dumps, fines, etc. to be given as per specified table of format. Further, the details of top soil and waste/OB disposal management during the closure period of two years should be furnished as per table below:

Year	Top soil (cu.m)		OB/Waste (cu.m)	
	Top soil reuse	Top soil storage	Backfilling	Dumped
I				
II				
Total				

20. Para-9.2: Briefly describe the proposed dumping ground within lease area be proved for presence or absence of mineral with reference of bore holes data.
21. **Mineral beneficiation:** Material balance chart to be furnished indicating the yield at each stage, grade at each stage etc. Brief description is required about tailing/slime stacking in the lease area.
22. **Final Mine Closure Plan:** Para-11- Baseline information of the lease area should be described on the basis of information incorporated in first approved mining plan at the time of grant of ML. Existing base line information to be furnished on the basis of environment monitoring parameter carried out. The environment monitoring data of last one year to be enclosed for ready reference. Further, base line information to be furnished for Mining Lease area and surrounding 500 meter form lease boundary.
23. Para 11.2.1: During the field inspection it is observed that some of the pit benches are matured or going to be matured in near future. Hence, proposal of bench plantation over such benches to be given. The proposals to be supported with yearly plans and sections depicting yearly progress in the activities for land restoration/reclamation/rehabilitation, afforestation etc. called "Reclamation Plan". Further, proposal of reclamation of Sub-grade dumps/Fines to be given in the interest of protection of environment.
24. Para11.2.2: Describe the proposals to be implemented for securing the excavation/pits/mineralized dump or mineral rejects stacks/fine stacks by means of fencing etc. Explain the safety measures implemented to prevent access to surface openings, excavations etc. The lessee should ensure fencing

of any excavation endangering fall of persons/cattle etc. in terms of rule 26 of MCDR2017. Accordingly proposal to be revised. Further, Arrangements proposed during the mine abandonment plan and upto the site being opened for general public may be described.

25. Para 11.2.3: As discussed during site visit, proposals should be given separately for plantation existing, proposed and cumulative on Virgin area, Backfilled area, Dump plantation and plantation on ultimate benches indicating area and number of saplings. Same to be furnished in tabulated form.
26. Para 11.2.4: It is mentioned that no top soil is in the lease, however, top soil has been observed in the lease area. Check and rectify.
27. Para 11.2.5: All the features as mentioned in the format have not been described. Hence, complete recast of the para is required. Modify as per the guideline.
28. Para 11.2.6: Describe the existing air quality status based on the environment monitoring parameter. The mitigative measures to be taken for prevention of pollution of air may be described.
29. Para 11.2.7: The details of existing dumps to be given in tabulated form along with grid reference. No proposal of utilization of waste material is proposed, hence, the manner in which the waste material will be stabilized to be described.
30. Adequate proposal of retaining wall, garland drain and settling tank to be given all along the waste dump and mineral reject dump. Proposal for proper terracing and stabilization of slope to be given. The dead dumps should be proposed for fully rehabilitation by plantation and with gap plantation.
31. Para 11.2.8: Information in respect of all tailing dam to be given with their location. The steps to be taken for protection and stability of tailing dam, stabilization of tailing material and its utilization, periodic de-silting measures upto closure period to prevent water pollution from tailings etc., arrangement for surplus water overflow along with detail design, structural stability studies, the embankment seepage loss into the receiving environment and ground water contaminant if any may be described. Final closure should include the measures taken to secure the tailing dam to avoid any danger to public safety and to avoid any degradation of environment in future.
32. Para-11.2.11: The details of existing infrastructure available in the lease area should be furnished in tabular form and their present value and value at the end of 31/03/2020 after depreciation. Further their future utilisation should be evaluated. The decommissioning cost and final value of the decommissioned infrastructural facilities if any may be furnished.
33. Infrastructure details of essential commodity/related to basic need to be given and in no case, any infrastructural facility which is an essential commodity/related to basic need or which absence may cause any degradation of environment or any damage to flora and fauna in and around the ML area or any danger to public safety or public infrastructure like rail, road etc. shall be decommissioned (dismantling water supply, water treatment plant, power lines etc.) without prior intimation/approval of appropriate authority.
34. Para-11.2.12: Decommissioning of mining machineries and their possibility of post mining utilization, if any may be described. Back-up calculation of decommissioning of mining machineries to be enclosed for ready reference.
35. Para 11.2.13: The entire para needs to be described considering the required information as per the prescribed format. The details like name, phone number, address etc to be given of responsible person who can be contacted during any disaster or Risk.
36. Para-11.2.14: The details of contractual and on role man power to be given. The economic repercussions due to closure of mine have not been explained properly. Envisaged repercussions on the expectation of the society due to closure of mine. Number of local residents employed in the mine, compensation, satellite occupations should be describe considering the impact of closure of mines.
37. Para11.2.15: Time scheduling for abandonment of mines considering the activity like waste dump management (Garland drain, retaining wall, settling tanks, plantation), safety and security (fencing of pits, dumps etc), disposal of machineries, reclamation & re-habilitation, infrastructure, protective measures of environment should be supplemented by PERT (programme evaluation review

technique) or Bar chart and these activities should be clearly shown on reclamation plan. Possible closure activity proposal should be started from the year 2018-19.

38. Para 11.2.16: Abandonment cost as furnished in tabular form has not included the cost of material required, safety measures implemented to prevent access to surface openings/excavations/dumps etc. The cost of maintenance, security and supervision has also been not included. . Abandonment cost to be estimated based on the activities required for implementing the protective and rehabilitation measures including their maintenance and monitoring programme. Accordingly modify the cost of the abandonment.
39. Para-11.3: The information on protective measures has not been furnished as per format prescribed in guidelines with break-up of forest non-forest area. Para-12 may be omitted as per new guidelines.
40. **Plates:** General: It is observed that North has not been shown in few plans. The indication of North to be shown invariably in all the plans. All the updated plans and sections to be submitted (by the end of March 2018). Accordingly all the tables may be modified. The date of survey to be mentioned in all the plans and sections.
41. **Key Plan:** The approach road to lease area has not shown. Many of the features as prescribed under rule 32(5) of MCDR, 2017 has not been shown on the plan like village boundary with population, forest with tree density, sanctuary, waste land, agriculture land etc. The prominent wind direction to be shown with wind rose diagrammed.
42. **Surface Plan:** The surface plan to be updated as discussed during the field. Further, proposed excavation block, waste dumping block, waste dump re-handling block, mineral storage block etc. as per the approved document to be marked.
43. UTM coordinates also to be mentioned of boundary pillars in table presented on the surface plan. GCP to be highlighted and should be visible. The surface plan should also include the location of all existing BH. The color code for BH drilled during last scheme period should be different.
44. **Geological Plan & Section:** The table of proposed exploration to be depicted on the geological plan. A separate plan showing different level of exploration and relevant information to be submitted for more informative along with geological plan. Instead of inferred Ore, same may be mentioned as proposed level of intersection in long vertical section.
45. **FMCP or Reclamation plan:** All the proposed features in PMCP to be depicted year wise in the plan. The color code for existing and proposed feature should be different. Accordingly, reclamation plan to be revised. All the proposed features in tabulated manner may be depicted on the plan.
46. **Enclosures:** Copy of form I and J 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.
47. Proof of address submitted in respect of qualified person is not legible. Further, few of the annexures are not legible like forest clearance etc.
48. Signed Self-assessment copy of star rating to be submitted. All the annexure to be properly numbered/paged and signed by the QP. Annual return of last three years to be submitted.
49. Copy of approval letters of all the documents (MP/RMP) as mentioned on page 12 to be enclosed. Documentary evidence in respect of the para 5.32 to be enclosed.
50. NABL Accreditation certificate of laboratory from where Chemical Analysis carried out should be enclosed.
51. Some photographs covering ML Boundary pillars, mining activity, dumps, processing plant, core shed etc. to be enclosed.

In view of above comments and site inspection, wherever necessary correction required to be made in plates and text.