



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. MPM/FM/03-ORI/BHU/2019-20

दिनांक / Date: 15.05.2019

To

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

Sub: Modification of Mining Plan of Gandhamardan Iron Ore Mines (BLOCK-B) over an area of 1590.8673 ha in Keonjhar district of Odisha of M/s Odisha Mining Corporation Limited submitted under Rule-17 (3) of MCR, 2016.

Ref: - i) Your letter no. 6805/OMC/PMC/19 dated 18.04.2019 received on 24.04.2019.
ii) This office letter of even no. dated 25.04.2019.
iii) This office letter of even no. dated 25.04.2019 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 Modification of Mining Plan along with Progressive Mine Closure Plan has been examined in this office based on site inspection carried out on 05.05.2019 by Shri G. C. Sethi, Deputy Controller of Mines alongwith 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 Modification 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 Modification 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 Mining Plan. It may be noted that no extension of time in this regard will be entertained and the Modification 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 Sunil Kumar Kar and Shri Rabindra Mohanty, Qualified Person, M/s Odisha Mining Corporation Limited, OMC House, Post Box No.34, Bhubaneswar-751001, Odisha.

(HARKESH MEENA)
क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

SCRUTINY COMMENTS ON EXAMINATION OF MODIFICATION OF MINING PLAN & PROGRESSIVE MINE CLOSURE PLAN FOR GANDHAMARDAN IRON ORE MINE (BLOCK-B) OF M/S ODISHA MINING CORPORATION LTD., OVER AN EXTENT OF 1590.8673 HECTARES, LOCATED IN UPPER JAGAR, URUMUNDA, UPAR KAINSARI, NITIGOTHA, ICHINDA, AMBADAHARA, SALARPENTHA & DAONLA VILLAGES AND GANDHAMARDAN PROTECTED RESERVED FOREST, UNDER BANSPAL TAHASIL OF KEONJHAR DISTRICT OF ODISHA STATE, SUBMITTED UNDER RULE 17(3) OF MCR, 2016 AND RULE 23 OF MCDR, 2017.

1. Sequence of paragraph and its numbering as per IBM Manual Appraisal MP 2014 has not been covered in text. All the headings as mentioned in the IBM Manual Appraisal MP 2014 should be furnished in all chapters in the text.
2. In Para 2(a), it is mentioned that period of lease is extended up to 10.07.2040 which is incorrect as presently the SLD has been executed till 31.3.2020. Hence, necessary corrections to be done.
3. The term subgrade should be replaced with mineral reject part of ROM. Need to do necessary corrects at relevant places.
4. In table 1.13, the level of exploration for 42.91936 Ha has not been mentioned.
5. In para 1.e (iii), the details of sample analysis borehole wise along with check analysis have not been furnished in tabulated format. Also, it has not been mentioned where the primary and check samples have been analyzed. The details of chemical analysis report have not been enclosed. Need to do necessary correction.
6. In para 1.e (iv), expenditure incurred in various prospecting operations till date have not been furnished. The documentary evidence to be enclosed in support of expenditure incurred in various exploration operation which was carried out right from inception of mine. The respective Form J and Form K of already drilled boreholes should be annexed with detailed litholog.
7. The information of drilled BH to be submitted as per following format:

S. No	Year of drilling	B H Id	Borehole coordinates			Bore hole Inclination	Hole diameter	BH closing Depth	Type of BH (Core/ RC/DTH)	No. of samples analyzed
			Easting (UTM)	Northing (UTM)	Collar mRL					

8. The lease area explored under different category of UNFC norms as shown in table in page no 24 is incorrect and should be recalculated as per the provision of Part II point no.4 and part III of Minerals (Evidence of Mineral Contents) Rules, 2015 (MEMC, Rule 21015). The justification for area considered for G1/G2/G3 etc. should be given properly as per the provision of MEMC Rules'2015. Necessary corrections to be done at all relevant places of the document and resource estimation.
9. The exploration proposal under para 1(i) has to be modified as the proposal to the extent as mentioned. (a) The backlog of previous exploration proposal of the modified mining plan period has not been proposed. (b) Boreholes have not been proposed over mineralized zones. (c) New boreholes have to be proposed where the existing boreholes have either been terminated or closed prematurely without intersecting the ore zone at depth (d) borehole spacing should be such that all the boreholes falls in grid pattern as per part III of Minerals (Evidence of Mineral Contents) Rules, 2015 (MEMC, Rule 21015). Adequate proposal of exploration to be given to explore entire lease area under G2 level of exploration as per Part III of MEMC, rule 2015. Necessary modification to be done in exploration proposal.

The details of the proposed exploration to be given as per 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											
Total						Total BH	Total mts				

The summary of the modified exploration proposal should be furnished in the following format.

Year	No of Boreholes	Type of borehole	Grid Interval	Total Meterage	No. of Pits, dimensions and volume	No. of Trenches, dimensions and volume
2019-20						

10. Complete chemical analysis for entire strata for all radicals may be undertaken for selected samples from a NABL accredited Laboratory or Government laboratory or equivalent. Entire mineralized area may be analyzed meter wise with 10% of check samples. (At least for 10% of total samples may be analyzed in accordance to BIS and reports from NABL accredited/other government laboratory). Accordingly, proposal has not been submitted under future exploration program
11. In Geological sections, the lithocorrelation has not been done scientifically and the lateral extent should be as per the provision of MEMC Rules 2015. The Geological section should corroborate with the litholog. UNFC codes have not been shown in geological sections. The blank portion should be filled with relevant lithology. Need to do necessary correction as discussed in the field.
12. Parameters to be considered for resource assessment has not been considered as mentioned in IBM appraisal of MP 2014. Resources and Reserves within the lease have not been arrived after applying results feasibility/prefeasibility study and economic evaluation of deposit based on various factors such as: a) Recovery factor have not been should be based on field test and authenticated from NABL accredited laboratory having valid recovery test in its scope of accreditation. The bulk density considered for saleable ore (above cutoff grade) and Mineral reject (between threshold and cut-off grade) should be determined separately based on field test and authenticated from NABL accredited laboratory. Instead of specific gravity, bulk density should be used in resource & reserve estimation. Therefore, the parameters considered for reserve and resource estimation should be corrected and modified as per points mentioned.
13. Further in the calculation of reserves and resources the Mineral reject/Subgrade (between threshold value and cutoff (grade) to be furnished. As per MEMC Rules 2015, For General (G2) and detailed (G1) stages of exploration, the lateral extension of the ore to be considered for resource assessment shall depend on geological considerations supplemented by geological continuity by mapping or by other means and in any case shall not be more than 50% of the grid spacing of the probe points. Therefore, the projection of resources in the sections should not be more than 50% of the grid spacing. This lateral extension in sections has not been done scientifically as discussed in the field. Also, for General (G2) and detailed (G1) stages of exploration the depth continuity of mineralization may be considered limited to the depth up to which direct evidence of mineralization is established. Hence, geological sections have to be modified and section wise resources and reserves have to be re-estimated as per MEMC Rules 2015 and new UPL has to be drawn. Accordingly, the resources and reserves are to be updated in all relevant places in the text and in tables.
14. Resources and Reserves within the lease may be arrived after applying results feasibility/prefeasibility study and economic evaluation of deposit based on various factors such as: a) Mining method, Recovery factor, mining losses, processing loss etc. b) Cutoff grade, Ultimate pit depth proposed. c) Mineral/ ore blocked dues to benches, barriers, pillars, road, railway, river, nala, reservoir, electric line and other statutory barriers etc, under forest; sanctuaries etc. where necessary permissions are not available. Need to specify and address the above points in reserve and resource calculation.

15. Details of resource estimation by cross sectional method for Measured Mineral Resource (331) and Indicated Mineral Resource (332) have not been furnished separately. Further, details calculation of reserves and resources by cross sectional under 111, 122, 211, 221 and 222 categories of UNFC have to be furnished.
16. Prefeasibility and Feasibility report should be submitted with the document.
17. The description of the existing pits/dumps/Mineral rejects stacks/ fines or lump stocks in the following table to be furnished.

Existing Pits:

Location (Grid)	Block	Size of Pit (in m)		Surface area covered (in Ha)	Top RL (m)	Bottom RL (m)	No of benches
		Length	Breadth				

Existing Dumps:

Name of the dump	Block	Location (Grid)	Length (max) in mts	Breadth (max) in mts	Area occupied		Grade
					(m ²)	(ha)	

18. In para 2 .A. (a), the details of the existing stocks as on “date” has not been mentioned.
19. In para 2 .B.(a), in table 2.3, the figs of insitu excavation has not been furnished in cum. In the same para, a separate table showing the insitu excavation figs in tones or million tones should be furnished. Details calculation of Ore, Mineral reject/subgrade and waste have to be furnished section wise by cross sectional method.
20. In table 2.4, the bulk density should only be referred and should be used in calculation of excavation quantities.
21. Dump rehandling (for the purpose of recovery of mineral) has not been addressed properly. Need to submit information in the format specified as per IBM manual of MP 2104.
22. The information pertaining to maximum depth of workings may be provided in the tabular format below.

Name of the Quarry	Existing depth in mRL		At the end of plan period (mRL)		At the end of conceptual period (mRL)		Depth of water table (mRL)
	Top	Bottom	Top	Bottom	Top	Bottom	

23.

24. The information on top soil, overburden and mineral rejects to be provided in following format.

Year	Top Soil (cum)		Overburden (cum)		Mineral Rejects		
	Reuse/spreading	Storage	Backfilling	Storage	Storage	Blending	Beneficiation

25. In the waste disposal it has not been described whether the site selection for dumping is outside the UPL or not. And further, the dump proposal should be outside the UPL. Need to do necessary corrections in the proposed waste dumping proposal.
26. In the material balance chart the feed, product, recovery, and its grade at each stage of processing in terms of quantity and quality has not been furnished.

27. In para 8.3.1, it has to be clearly mentioned that the area is not matured for reclamation. Hence there is no proposal for reclamation through backfilling. Need to do necessary corrections.
28. In FA calculation, the area put on use at the start of plan period as on 28.02.2019 is less than the area put on use at 31.10.2015 as mentioned in the previous approved document. Further, the additional area required under various heads should be justified as proposal is for only one year. The area under different heads should be rechecked and calculated properly. Additional bank guarantee if required has to be submitted if the net considered area is more than the area shown under FA calculation. The area under different heads of FA table should be properly shown in different hatching with present area and additional area. Copies of bank guarantee for amount Rs 147759000 have not been submitted. Need to submit the copies of bank guarantee for the entire amount

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 and sections should be signed with date by certified Surveyor, Qualified Person, Mine Manager, Mining Engineer and Mining Geologist as per provisions of MCDR, 2017 and MMR, 1961. 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 x-axis coordinates have not been shown in the plates. Need to do necessary corrections at relevant places.
2. **KEY PLAN:** The key plan should incorporate all features as mentioned Rule 32 5 (a) of MCDR 2017. The prominent wind direction to be shown by rose diagram in key plan and other relevant plans. The approach road to the lease area should be shown with Co-ordinates of extremity of lease area.
3. **SURFACE PLAN:** All the boundary pillars to be given in UTM too. All the updated boundaries of Fines stack, Waste dump, Mineral reject dumps to be shown on the plan. Surface right area to be shown on the plan with different type of land schedules. All the features have not been shown in the index. Common boundary with other lessees if any should be shown on the plan. The Surface Plan should be prepared to satisfy the provision as laid down rule 32 (1) (a) of MCDR'2017. The distance and bearing from GCP should be shown in map.
4. **GEOLOGICAL PLAN & SECTION:** (i) All drilled BH, quarries and trial pits to be shown with red color. (ii) Structural information has not been furnished adequately. (iii)The redefined UNFC boundaries and UPL to be shown in Geological Plan and sections. (iv) Section lines with nomenclature should be highlighted on the plan. Proposed boreholes should be shown in dotted line in sections. Iron ore mineralization area should be clearly demarcated on the Geological plan. The Geological Plan should be prepared to satisfy the provision as laid down rule 32 (1) (b), (c) and (d) of MCDR'2017. Plan and section should be drawn on same scale. (v). UNFC codes should be shown in the sections. (vii). Blank space above UPL should be filled with relevant lithology (vi) The index of subgrade should be replaced with relevant lithology.
5. **DEVELOPMENT PLAN & SECTION:** (i) present pit profile configuration with UPL and proposed development to be shown in different colour. (ii)) The proposed and existing bench mRL to be shown clearly over year wise development plan and sections. (iv) Lithology should be shown in the area proposed for development both in plan and section (iv) development sections to be redrawn over revised geological sections (v) the blank portion in development section should be filled with relevant lithology (vi) The index of subgrade should be replaced with relevant lithology.

6. **RECLAMATION PLAN:** All year wise proposals as per comments in PMCP chapter to be depicted on the plan.
7. **ENVIRONMENT PLAN:** The Environment Plan as prepared should be satisfy the provision as laid down rule 32 (5) (b) of MCDR'2017. Wind rose diagram should be depicted.
8. **Environment management plan** need not to be submitted.
9. **Financial Assurance Area Plan:** The area degraded due to mining and allied activity to be considered in FA calculation. It should be re-calculated 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 Geologist/surveyor/QP etc. It is observed that many of the annexures are not legible. A legible copy of same to be enclosed.
2. Copies of Form J and Form K of all drilled boreholes have not been submitted.
3. The chemical analysis results of borehole samples from NABL accredited laboratory have not been submitted.
4. In the certificates from the qualified persons, a mentioned has been made for modified mining plan; instead the same should be indicated as modification of mining plan. Accordingly, the certificates should be revised.
5. The I.D proof of the applicant enclosed as annexure-3 is not legible; thereby a fresh & legible copy of the same should be submitted replacing the enclosed one for clarity.
6. Few pages of the lease deed enclosed as annexure-7 is not legible and the same should be replaced by fresh & legible copies.
7. As per the certified land schedule from Tahasildar, Banspal enclosed as annexure-12, the extent of grand total of the lease area is corrected & arrived at 1590.7445ha whereas in the lease extension letter from State Govt. enclosed as annexure-10, the lease area is mentioned to be for 1590.8673ha, thereby the mismatch in extent of the lease area should be reconciled.
8. The copy of the environmental clearance letter is stated to be enclosed as annexure-14A & 14B but no such annexure is found enclosed.
9. In the surface right order enclosed as annexure-16, the name of the lease/mine is missing, which is not acceptable in the name of Gandhamardan (block B) Iron mine of M/s OMC Ltd.
10. The copy of the environmental monitoring report for the quarter ending September 2018 from M/s Centre for Envotech and Management Consultancy Pvt. Ltd has been enclosed as annexure-18, but the monitoring reports for the quarters ended upto March 2019 from NABL accredited laboratory has not been submitted.
11. The annual returns for last five years from 2013-14 to 2017-18 has been enclosed as annexure-20A, which is uncalled for and need not be attached along with the mining plan as the same were submitted to IBM separately under rule 45 of MCDR, 2017.
12. The calculations for ore & sub-grade for the year 2019-20 has been enclosed as annexure-21 and on examination of the same, the following observations are made: (i) The cross sections considered and location co-ordinates for excavation planning has not been furnished. (ii) The recovery percentage of the iron ore, sub-grade/mineral reject & waste generation is missing. (iii) The grades of iron ore, sub-grade/mineral reject and the waste may also be furnished supported by authenticated chemical analysis report along with the scope of accreditation of the NABL accredited analytical laboratory. Accordingly, corresponding incorporations/ modifications may also be made in connected paras in the text & relevant plates.
13. The report named as feasibility report has been furnished in the contents as annexure-24 but in the enclosure side, the same has not been named as per the contents.

14. The geological exploration report of Gandhamardan (block B) iron ore mine of M/s OMC Ltd prepared during May 1980 has been enclosed as annexure-24, instead the updated exploration data if any supported by Govt. /NABL accredited laboratory needs to be submitted for more informative.
15. The photographs submitted for drainage control & run-off control along with the enclosed annexure-25 is not clearly legible, thereby few fresh and coloured photographs should be submitted.
16. The copy of the application for common boundary permission by OMC & the permission accorded thereof by DGMS for Gandhamardan Iron ore Mine (block A) & Gandhamardan Iron ore Mine (block B) of M/s OMC Ltd., has been enclosed as annexure-26 & 27 but no such common boundary proposal has been incorporated in the modification of mining plan submitted for Gandhamardan Iron ore Mine (block B) and no modification of mining plan for Gandhamardan Iron ore Mine (block A) has been submitted, thereby the enclosed annexure 26 & 27 are uncalled for and should be detached to avoid confusion.
17. The papers connected to e-auction of low grade iron ore in respect of Gandhamardan Iron ore Mine (block B) has been enclosed as annexure-30, which is uncalled for in this document and must be detached.
18. The copy of the explosive procurement license issued by the competent authority in favour of M/s Odisha Mining Corporation Ltd. in favour of Gandhamardan iron ore mine (block B) has not been enclosed. Besides, a copy of the blasters license issued by the competent authority for carrying out blasting operations may also be submitted.
19. No photographs in support of the existing quarry, dump, reclamation, rehabilitation & afforestation etc. have been enclosed along with the document, which should be submitted for more informative.

Senejundar
15/5/19
(Sudip Ranjan Mazumdar)
Senior Mining Geologist

G.C. Sethi
15/5/19
(G.C.Sethi)
Deputy Controller of Mines