



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/41-ORI/BHU/2017-18

Date: 25.01.2018

To

✓ Shri T V Narendran, Managing Director & Nominated Owner,
M/s Tata Steel Ltd,
At/P.o- Jamsedpur,
Dist – East Singbhum,
Jharkhand - 831001

Sub: Approval of modification of Review of Mining Plan of Joda East Iron Ore Mine along with Progressive Mine Closure Plan (PMCP), over an area of 671.093 ha in Keonjhar district of Odisha State, submitted by M/s Tata Steel Ltd under Rule 17(3) of MCR, 2016.

Ref: - i) Your letter No. GM/PL/1742/56/2017 dated 19.12.2017 received on 09.01.2018.
ii) This office letter of even no. dated 09.01.2018.
iii) This office letter of even no. dated 09.01.2018 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 site inspection carried out on 10.01.2018 by Shri G C Sethi, Deputy 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 1 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,


(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional controller of Mines

SCRUTINY COMMENTS ON EXAMINATION OF MODIFICATION OF SECOND REVIEW OF MINING PLAN ALONG WITH PROGRESSIVE MINE CLOSURE PLAN FOR JODA EAST IRON MINE OF M/S TATA STEEL LTD., OVER AN EXTENT OF 671.093 HECTARES, LOCATED IN JODA, KAMARJODA, BANSPANI, KHUNTPANI VILLAGES & BAITARANI RF, UNDER CHAMPUA SUB-DIVISION OF KEONJHAR DISTRICT OF ODISHA STATE, SUBMITTED UNDER RULE 17 OF MCR, 2016 & 25 OF MCDR, 2017.

- (1) In the front cover, the document has been submitted for modification of second review of mining plan, which is not correct, instead it can be mentioned as modification of review of mining plan. Accordingly corresponding corrections/modifications may also be made in other places of the document.
- (2) The contents for list of plates have been furnished but the same has not been enclosed along with the document.
- (3) The copies of the qualification & experience in support of the qualified person has been enclosed as annexure-I but ID proof in favour of Shri Amit Sharma is missing, which should be submitted for more informative.
- (4) The ambient Air quality, water quality & noise level analysis report has been enclosed as annexure-II,III & IV but the reports dose not bear name of the analytical laboratory, which should be from 3rd party NABL accredited laboratory or from Govt. laboratory. Besides, the copy of the valid NABL accreditation certificate in support of the analytical laboratory, which has analysed the air & water samples, may also be submitted. Moreover, the analysis report for ground vibration etc. may also be enclosed for more informative.
- (5) Few photographs showing the environmental status, boundary pillars, modern equipment & best practices has been enclosed as annexure-XVIII but no photographs in support of existing pits/quarries & active dump(s) has been enclosed, which should be submitted for more informative.
- (6) The latitude & longitude of the lease boundary pillars has been furnished in the enclosed annexure-XXII and the same may also be furnished atleast in the plate submitted for surface plan for more informative.
- (7) The copy of the approval letter of the scheme of mining approved on 26.03.2015 has been enclosed as annexure-XXIII but the copies of approval letter for the mining plan/scheme of mining approved in different occasions prior/after to the above scheme of mining has not been enclosed & the same should also be submitted.
- (8) On examination of the enclosed annexure-XXIV, it is found that, out of the total lease area of 671.093ha, an extent of 283.92ha has been explored upto G1 level, 164.46ha upto G2 level & 222.70ha upto G3 level as on 01.10.2017. Therefore, the extent of area explored upto G2 level & G3 level should be proposed under exploration upto G1 level in the form of coring bore holes during the next financial year i.e. 2018-19. Accordingly, necessary modifications/incorporations may also be made in geology & exploration chapter and other relevant places in the text with proper plate reference.
- (9) The borehole logs with chemical analysis report are stated to be enclosed as annexure-XXVB but the authenticated analysis report for such logs from Govt. /NABL accredited laboratory has not been enclosed and the same should be submitted. Besides, atleast 10% of the analysis should be done by third party NABL accredited Laboratory.
- (10) The enclosed annexure-XXVI furnished for justification of reserves & resources above cut-off grade of Fe more than=58% but no such justification is found in the above referred annexure.
- (11) The details of resources/reserves established at 58% Fe cut-off has been furnished in the enclosed annexure- XXVII but on examination of the same, the following observations are made: (i) The reserves/resources have been estimated for average thickness of 9m in between the two mRLs but the same has not been linked with the borehole analysis report of the individual boreholes in

the particular grids. (ii) In column No.7, the varied bulk density has been taken into account for reserves/resources estimation but the basis on which such varied bulk density has been taken into account has not been explained. However, the bulk density study/test report from NABL accredited/Govt. Laboratory should be obtained & enclose along with the document for its authenticity. (iii) The computation for percentage recovery of iron ore & the basis for the same have not been explained, which should be supported by an authenticated recovery test report from NABL accredited laboratory with valid scope of accreditation for iron ore. (iv) No authenticated analysis report for the grades of the resources/reserves indicated in the 8th column of the above referred annexure, which should be from the basis of the litho logs analysis of the bore hole samples of individual bore holes. (v) Moreover, the cross sections considered for reserves/resources estimation also not furnished. In view of the above, it is found that, the reserves estimated are not as per the UNFC guidelines. For reserves estimation, the following procedure is to be followed:-

Initially cross section wise reserves/resources should be established for G1, G2, G3 and G4 categories of UNFC system based on the degree of exploration and prospecting carried out in the entire lease area as per criteria laid down in the guidelines. This should include the entire resources within the lease including the boundary barriers, mineral to be locked up in benches etc. After this, the geological reserves/resources should be upgraded to various categories of UNFC based on their feasibility and pre-feasibility studies with suitable justification for each category. Further, the reserves /resources which is not mineable due to statutory barriers, safe working of the mine, waste dumping, internal roads, forest area for which clearance is not there should be put under the (211), (221) & (222) resources category of UNFC. Reserves below the cut-off grade should also be put under the feasibility / pre-feasibility resources category and the same should be adequately discussed in the feasibility study report. Accordingly, corresponding changes may also be made in geology & exploration chapter.

(12) The valid consent order from State Pollution Control Board, Odisha has not been enclosed & the same should be submitted.

(13) The copy of the explosive procurement license issued by the competent authority in favour of Joda East Iron mine of M/s TATA Steel Ltd., 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.

(14) On examination of the contents for plates, it is found that, the plates has been numbered in the manner like MP/JEIM/R2/M1/1/17, instead the plates should be either numbered like 1,2,3 etc. or I,II,III for ease in identification.

(15) In the introduction chapter, the expansion status of steel plant & production requirements beyond the proposed modification period 2017-18 to 2019-20 has been furnished, which is irreverent, thereby the expansion & production requirements during the aforesaid modification period only need be furnished. Besides, the valid & specific reasons for submission of modification of the approved scheme of mining may also be indicated.

(16) The proposed & actual status of afforestation for the period from 2015-16 to 2017-18 has been furnished in tabular form but the location co-ordinates of the actual planation done is missing, which should be furnished by adding one more column right to the table for more informative. (Table-3.3.3)

(17) The extent of other areas of 360.88ha is considered as non-mineralised based on surface out crops like BHJ, Shale, bore information etc. instead the said portion of the lease area should be explored upto G1 level during the modification period i.e. by 2019-20. Accordingly, the exploration proposal furnished in table-1.3 may also be revised with proper plate reference. (Table 1.2.1)

(18) An extent of 57.28ha has been explored upto G2 level & 6.53ha upto G3 level, instead the said area should be proposed under exploration upto G1 level during 2018-19. Accordingly, the exploration proposal furnished in table-1.3 may also be revised. (Table 1.2.2)

(19) Existing method of mining has not been furnished in detail as per the heading of the para, which should be discussed, including the existing status of pits/quarries with their dimension, extent of area, dumps with size/capacity/active/deadness status, reclamation, rehabilitation & afforestation etc. for more informative. Besides, nothing has been discussed about the proposed method of mining and the same should also be furnished by giving proposed quarry(s), bench formation status both in overburden & in ore zone, dumping, reclamation & rehabilitation etc. for clarity. If the existing quarries are proposed to be developed /extended, the same may also be furnished. In the light of the above; the entire para may be revised. [Para 2.0(A)(a)]

(20) Certain information/proposal beyond the modification period i.e. 2019-20 has been furnished, which is not relevant and must be erased. (Page No. 34)

(21) The table 2.1a & 2.1b are not in proper place as per the proper format given in the guidelines. Besides, why two tables are furnished for similar information for the same modification period is not understandable. However, the table 2.1c & 2.1d should replace the tables 2.1a & 2.1b [Para 2.0(A)(b), page No. 34]

(22) In the table 2.1c & 2.1d furnished, under the heading **Insitu Tentative Excavation**, the following observations are made: (i) The proposed status of OB generation, production of iron ore & mineral rejects generation has been furnished in the above referred tables but the bench/RL of the excavation planning has not been given, which should also be furnished by adding one more column in the table. (ii) The recovery percentage of the iron ore & mineral reject is missing, which should be furnished supported by authenticated recovery test report. (iii) The location co-ordinates of the excavation planning for each year also not furnished and the same may also be given by adding one more column in the table with proper plate reference. (iv) The grades of iron ore & mineral reject may also be furnished supported by authenticated chemical analysis report from 3rd party NABL accredited laboratory or from Govt. Laboratory. Accordingly, corresponding incorporations / modifications may also be made in connected paras in the text & relevant plates. [Para 2.0(A)(b)(i), page No. 35]

(23) The existing sub-grade dump No. 1 has proposed to be re-handled but the Fe content in the sub-grade dump has not been given, which should be furnished supported by an authenticated chemical analysis report from 3rd party NABL accredited laboratory. Moreover, the expected percentage of recovery from such dump may also be furnished supported by authenticated recovery test report for its acceptability. The year wise re-handling proposal for the above referred sub-grade dumps may also be furnished and the table may be revised accordingly. (Table 2.2)

(24) Huge excavation planning has been proposed for the period from 2017-18 to 2019-20 in tabular form but the same should be supported by slice plans. (Table 2.4 to 2.8a)

(25) The name of the quarry(s)/location co-ordinates of the proposed workings should be furnished indicating the direction of advancement of quarry faces. Besides, the height, width & length of individual benches may also be furnished indicating the bench specifications/parameters for each year of the mine development. The status of dumps both for waste & sub-grade materials & the location co-ordinates proposed for the same with size/capacity and direction of advancement may also be discussed. Moreover, the requirements of reclamation & rehabilitation may also be furnished. In the light of the above, the information furnished in para 2.0(A) (e) may also be revised. [Para 2.0(A)(d)]

(26) Under the heading conceptual mine planning, the excavation proposal & processing details for the period from 2020-21 to 2024-25 has been furnished in table 2.11(a) & 2.11(b), which is not acceptable as the modification has been submitted for the period from 2017-18 to 2019-20, no committed proposal for the subsequent five year period is permitted beyond the modification period. Therefore, necessary corrections/modifications may be made not only in this para but also in other relevant places of the document. [Para 2.0(A)(f), page no. 44]

(27) The land use pattern at conceptual stage has been furnished in tabular form but the same for existing as well as for each year of the ensuing modification period has not been given, which should be furnished in separate tables for ease in monitoring. (Table 2.12)

(28) The proposed reclamation status at the end of the conceptual period has been furnished in tabular form but the proposal for same for each year of the ensuing modification period is missing, which should be furnished if any for more informative. (Table 2.13)

(29) The final dimension of the sub-grade stacks are furnished in tabular form & it is suspected that, such stacks are at the end of the conceptual period, which is not correct as certain quantities of the sub-grade materials can be blended with the high grade ore in the process of make them consumable. Therefore, the table may be revised accordingly. (Table 2.14)

(30) The proposed plantation for each year of the modification period has been furnished in tabular form but the location co-ordinates and survival rate of such plantation is missing, which should be furnished & the table may be revised accordingly. (Table 4.7)

(31) On examination of the refer table, it is found that, the additional area requirement on account of mining, infrastructure & roads etc. has been drastically reduced, which appears to be not correct as the excavation planning during the modification period & beyond has been proposed to be enhanced, thereby the table may be revised suitably. [Table 8.2(a)]

(32) Considering the revision of land use furnished in table 8.2(a), the proposed land use given in the table under reference may also be revised. [Table 8.2(b)]

(33) Pit/quarry wise extent of area proposed to be degraded in each year of the ensuing modification period should be furnished. Besides, pit wise extent of area utilized for dumping, stacking, reclamation, rehabilitation & afforestation for each year of the aforesaid period may also be furnished. All should be furnished in tabular form and rest of the things should be erased. (Para 8.3.1)

(34) The extent of area requirement on account of mining, infrastructure & roads etc. has been drastically reduced in table 8.6.1, whereas the excavation planning during the modification period & beyond has been enhanced, thereby suitable justification for reduction in extent of area should be furnished. Accordingly, the calculations given for financial assurance may also be corrected in the refer para. (Para 8.6)

(35) DRG No. MP/JEIM/R2/M1/01/17(Key Plan): The details of the deficiencies found on the plate are as follows: (i) Similar index reference has been given for metal & un-metal roads, which is not correct, thereby two separate index reference for each type of road should be furnished. Besides, the same is also not matching with that of the plan portion of the plate. (ii) The index reference given for temple & monitoring stations are not to be seen on the plan portion of the plate.

(36) DRG No. MP/JEIM/R2/M1/02/17 (Surface Plan): (i) Existing quarry faces for all the blocks have not been marked. Besides, the overburden & ore benches are not been marked with different colour codes for ease in monitoring. (ii) The existing status of all the sub-grade dumps also not clearly depicted. In the light of the above, all the relevant plates may also be revised accordingly. (iii) The pillar co-ordinates of all the lease boundary pillars have not been furnished. (iv) At least three permanent ground control points beyond the lease area has not been selected, which should be done. Besides latitude and longitude of those ground control points should be furnished and the ground control points need to be linked with boundary pillars.

(37) DRG No. MP/JEIM/R2/M1/3/17 (Surface Geological Plan): (i) As per the new Minerals (Evidence of Mineral Contents) Rule, 2015, the level of exploration at different stages (G1, G2, G3, G4) and unexplored area should be properly defined in tabular format and the same should be marked on the geological plan. (ii) The exploration proposal covering the entire lease area to the G1 level of exploration should be proposed and the same should be completed by 2019-20. Accordingly, necessary modifications/incorporations may also be made in Geology and Exploration chapter.

(38) Drawing No. MP/JEIM/R2/M1/4/17 (Geological Cross Sections): (i) The geological index given in the geological sections are not matching with that of the geological plan, thereby the indexing as well as the lithology for sections should be revised in such a way that, the same will match with the geological plan. (ii) The geological cross sections are not drawn from one end to other end of the lease boundary. In the light of the above, the drawings submitted for geological plan & sections should be revised.

(39) Drawing No. MP/JEIM/R2/M1/4/17 (Development Plan & Sections FY 2017-18, North Block): On examination of this plate, the following observations are made: (i) The excavation planning has been proposed in an erratic manner and the advancement directions of the benches are not known. (ii) The excavation has been proposed in a scattered manner almost in all locations of the lease area, which is not correct, thereby systematic & regular pattern of bench formation should be proposed and all the drawings submitted showing the development plans & sections and all other relevant plates may also be revised accordingly.