



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



BY REGD POST
Phone: 0674-2352463
Tele Fax: 0674-2352490
E-mail: ro.bhubaneswar@ibm.gov.in
Plot No.149, Pokhariput
BHUBANESWAR-751020

No. MS/FM/34-ORI/BHU/2017-18

Date: 00.12.2017

To

Mrs Nirupama Das, DGM (Geology),
Power of Attorney Holder,
M/s Odisha Mining Corporation Ltd.
OMC House, Bhubaneswar- 751001

Sub: Approval of Review of Mining Plan of Gandhamardan-A Iron Ore Mine along with Progressive Mine Closure Plan (PMCP), over an area of 618.576 ha in Keonjhar district of Odisha State, submitted by M/s Odisha Mining Corporation Ltd under Rule 17 of MCR, 2016.

Ref: - i) Your letter No. 17324/OMC/PMC/17 dated 11.12.2017.
ii) This office letter of even no. dated 13.12.2017.
iii) This office letter of even no. dated 13.12.2017 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 Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) has been examined in this office based on site inspection dated 23.12.2017 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 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 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 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 final 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.

Yours faithfully,

(HARKESH MEENA)

Regional controller of Mines

SCRUTINY COMMENTS ON EXAMINATION OF REVIEW OF MINING PLAN & PROGRESSIVE MINE CLOSURE PLAN FOR GANDHAMARDAN-A IRON ORE MINE OF M/S ODISHA MINING CORPORATION LTD., OVER AN EXTENT OF 618.576 HECTARES, LOCATED IN SAUKATI, DAONRA VILLAGES & GANDHAMARDAN PRF, UNDER TELKOI TAHASIL OF KEONJHAR DISTRICT OF ODISHA STATE, SUBMITTED UNDER RULE 17(1) OF MCR, 2016 AND RULE 23 OF MCDR, 2017.

(1) On examination of the front cover, it is found that, the review of mining plan has been submitted under Rule 17(1) of MCR, 2016, instead the same may be submitted under Rule 17(2) of MCR, 2016. Accordingly, corresponding modification/incorporation may also be made at other places of the document.

(2) In the certificate from Qualified Person Shri Sunil Kumar Kar, the provisions of MCDR, 2017 made under Section 18 of MMDR Act, 1957 has been observed, which is not correct, thereby the certificate should be revised by furnishing the appropriate section of MMDR (amendment) Act, 2015.

(3) The copy of the list of Board of Directors has been enclosed as annexure-1 but phone/fax/e-mail id of none of the directors has been furnished, which should be given for more informative.

(4) The ID proof of the power of attorney holder enclosed as annexure-3A is not clearly legible; thereby the same should be replaced by a fresh legible copy of more informative.

(5) The copy of the certificate of incorporation is enclosed as annexure-5 but the copy of memorandum of association in favour of M/s OMC Ltd is missing, which may also be enclosed.

(6) The consent order, dated 07.0.2011 from State Pollution Control Board, Odisha has been enclosed as annexure-14 but the same has already expired on 31.03.2016, thereby a valid consent for the same should be submitted.

(7) The copy of the bank guarantee valid upto 31.03.2018 has been enclosed as annexure-17 but the review of mining plan has been submitted for the period from 2018-19 to 2022-23, thereby a valid bank guarantee matching to the proposed plan period for the area put to use in different counts should be submitted replacing the enclosed one for ease in monitoring.

(8) The resources estimation at 45% Fe cut-off has been furnished in the enclosed annexure-20A but on examination of the same, the following observations are made: (i) The resources have been estimated for average thickness of 5m 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) The basis on which the recovery of iron ore percentage has been computed not explained, which should be supported by an authenticated recovery test report from NABL accredited laboratory with valid scope of accreditation for iron ore. (iii) No authenticated analysis report for the grades of the resources/reserves indicated in the 4th 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. In view of the above, it is found that, the resources/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.

(9) The calculations for ore, sub-grade & waste for the year 2018-19 has been enclosed as annexure-22 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 & waste generation is missing. (iii) The grades of iron ore, sub-grade material 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. In view of the above, the calculations for excavation planning furnished in the enclosed annexure-22, 23, 24 & 25 may also be revised. Accordingly, corresponding incorporations/modifications may also be made in connected paras in the text & relevant plates.

(10) Typical designed of retaining wall, garland drains & settling pit has been enclosed as annexure-27 but the same has not been linked with the relevant plates/drawings. Besides, no information regarding the existing/proposed dump(s)/stack(s) for which the design of such retaining wall, garland drains & settling pit has been proposed should be co-related.

(11) The borehole logs for a good number of bore holes have been enclosed as annexure-28 but the Form-J & Form -K for none of the boreholes has been enclosed, which should be submitted.

(12) It is found that, the DTH drilling sample analysis report of iron ore from Superintendence Company of India (Private) Ltd. Has been enclosed as annexure-29 but it is not known, whether the reports pertains to litho logs of bore holes enclosed as annexure-28 or for anything else should be specified and a certificate to that effect may also be enclosed from M/s OMC Ltd for its authenticity.

(13) Air, surface water, ground water, noise & vibration analysis report in respected of Gandhamardan-A iron ore mine of M/s OMC Ltd., has not been enclosed as annexure to the document, which should be submitted for all four seasons of the year, either from NABL accredited laboratory or from a Govt. Laboratory for more informative.

(14) The copy of the explosive procurement license issued by the competent authority in favour of M/s Odisha Mining Corporation Ltd. in favour of Gandamardan-A iron ore mine 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.

(15) The chemical analysis report of iron ore samples has not been enclosed and the same should be obtained either from a NABL accredited laboratory or from a Govt. laboratory & enclose along with the document.

(16) On examination of contents for list of drawings, the same has been numbered in the manner like MEC/Q7DU/11/16//01, instead the plates should be either numbered like 1, 2, 3 etc. or I, II, III for ease in identification/monitoring.

(17) Under the summery of proposals, the exploration for each year of the proposed five years period has been furnished in tabular form but the location co-ordinates of the proposed bore holes has not been given in the 1st table furnished in the page under reference, which should be furnished. (Page No.9)

(18) Under the heading **status of consents from SPCB**, the validity status of consent to operate enclosed as refer annexure-14 has already lapsed but fresh and valid consent to operate has not been submitted. (Page No.13)

(19) Under the heading **status of Mining Plan/SOM/Modified SOM**, the approval status of four number of scheme of mining/mining plan has been furnished but only the copy of the approval letter of mining plan, dated 14.08.2013 has been enclosed as annexure-10, instead the copies of the approval letter of all the document referred in the page should be submitted for more informative. (Page No.13 & 14)

(20) Year wise exploration proposal for the period from 2018-19 to 2022-23 has been furnished in tabular form; instead the proposal should be restricted for the years 2018-19 & 2019-20. Besides, **the balance un-explored area should be proposed under exploration in the form of coring boreholes upto the G1 level.** Accordingly, necessary modifications/incorporations may also be made in connected paras in the text with proper plate reference. [(Para 1.0(i), page No. 40 to 43)]

(21) 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 dumps with size/capacity, reclamation indicating extent of area in ha., rehabilitation & afforestation with extent of area in ha. etc. for more informative. Besides, the location co-ordinates of the existing quarries, dumps, reclamation & rehabilitation may also be furnished. Moreover, nothing has been discussed about the proposed method of mining and the same should also be furnished by giving proposed bench formation status both in overburden & in ore zone, dumping, reclamation & rehabilitation etc. for all the pits/quarries proposed for excavation. If the existing quarries/pits 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)]

(22) Under the heading **Insitu Tentative Excavation**, the following observations are made: (i) The recovery percentage of the iron ore, sub-grade & waste generation is missing. (ii) The grades of iron ore, sub-grade material and the waste also not given, which should be furnished supported by authenticated chemical analysis report. Accordingly, corresponding incorporations /modifications may also be made in connected paras in the text & relevant plates. [Para 2.0(B)]

(23) 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(f) may also be revised. [Para 2.0(e)]

(24) The grade of the sub-grade iron ore is considered 49.94 to 52.51%Fe, which should be checked and corrected. [(Para 4.0(a)]

(25) Pit/quarry wise extent of area proposed to be degraded in each year of the ensuing five year period should be furnished. Besides, pit wise extent of area utilized for dumping, 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)

(26) Drawing No. MEC/Q7DU/11/16/01(Key Plan): The details of the deficiencies found on the plate are as follows: (i) The index reference given for road is not matching with that of the plan portion of the plate. (ii) The index reference given for nala also not matching with that of the plan. (iii) The review of mining plan has been submitted for Gandhamardan-A iron ore mine, whereas the

location of Gandhamardan-B iron ore mine has been depicted on the plan, which is not acceptable. (iv) Population of the villages falling within 5km radius of the lease area has not been given in the plan portion of the plate even if the index reference for the same is given. (v) Index reference for direction of flow of water course has been furnished but the same is missing on the plan portion of the plate.

(27) Geo-referenced DGPS Map: (i) The name of the plate furnished in the contents for the drawing is different, thereby the same should be corrected. Besides, the plate has not been numbered as indicated in the contents. (ii) The plate is considered as the geo-referenced map but it is a DGPS map for the forest portion of the lease area, thereby the plate for geo-referenced map for the entire lease area should be submitted. (iii) The mining lease was granted & executed over an extent of 618.576 ha but the so called geo-referenced map has been prepared, over an extent of 400.175ha.

(28) Drawing No. MEC/Q7DU/11/16/03 (Geological Plan): (i) The index reference given for some of the geological features are not matching with that of the plan portion of the plate. Besides, the ultimate pit limit also not marked which should be depicted for ease in monitoring. (ii) New exploration proposal covering the entire lease area to the G1 level of exploration should be proposed. Accordingly, necessary modifications/incorporations may also be made in Geology and Exploration chapter.

(29) Drawing No. MEC/Q7DU/11/16/04A (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.

(30) Drawing No. MEC/Q7DU/11/16/05 (Surface Plan): (i) The index reference for existing quarry & dumps is missing and the same also not clearly marked on the plan portion of the plate. (ii) The pillar co-ordinates of all the lease boundary pillars have not been furnished. (iii) 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. (iv) Surveyor's signature is missing, which should be signed by a competent surveyor.

(31) Drawing No. MEC/Q7DU/11/16/06 (Development Plan at the end of FY 2018-19): (i) The index reference for existing quarry & dump is not matching with that of the plan. (ii) The index reference for proposed backfilling is also missing. (iii) The proposed waste dump has not been depicted on the plan and the index reference for the same also not furnished. In the light of the above, the plates submitted showing the development plan for the years 2019-20 to 2022-23 and other relevant plates may also be revised.

(32) Drawing No. MEC/Q7DU/11/16/11 (Year wise pit Development Section): (i) A composite development section for the proposed five year period has been submitted, instead separate development sections for each year of the development should be submitted. (ii) The lithology given in the development cross sections are not matching with that of the plan, thereby the sections should be drawn in such a way that, the same will match with the plan.

11.