

**Scrutiny Comments on examination of draft Modification of Mining Plan submitted under rule 17 (3) of MCR,2016 in respect of Gaotona E Dusrifall Iron ore Mine,TC No. 14/1958 over an area of 40.5365 Ha of M/s Sociedade Timblo Irmaos Limited Rep. by M/s Timblo Private Limited in Codli- Village, Dharbandora Taluka, South Goa Dist, Goa State.**

**Geology:**

- Para 1.e: Earlier exploration carried out so far in the lease area should be summarized as per table below and given in the text. Dated should be updated based on recent surveyed plans.

<b>Total Lease area:</b>						
Item of information	Lease area explored as per UNFC norms (in Ha) as on dt...					Remarks/ Comments including reasons for not carrying out the exploration as per UNFC norms.
	<b>Total Lease area = A+B+C+D+E</b>					
	G1 Level	G2 Level	G3 Level	Explored and found non-mineralized with level of exploration (Remarks)	Unexplored lease area	
	A	B	C	D	E	
Area as per level of exploration						
No. of BH Drilled						
No. of BH considered for Resource Estimation.						
Meterage Drilled						
Grid Interval						
Scale of Mapping						
<b>Reserve estimated after above exploration as on dated :</b>						
<b>Remaining Resource after above exploration as on dated:</b>						
<b>Total Reserve/Resource after above exploration as on dated:</b>						

- The lease was belongs to M/s. Timblo Pvt Ltd but all the exploration activities and analysis reports are named under M/s.Vedanta Ltd.This may be clarified.
- Detailed estimation sheet for reserve and resources need to be furnished showing sectional area as per UNFC category, influence, BD, recovery factor, location on plan & sections etc. The basis of bulk density and recovery factor should be given on the

field tests conducted for different grade of minerals as well as report from authenticated lab may also enclosed. Test result on moisture contents may also be included. Cut-off grade based on international/ domestic market conditions, mining and processing losses i.e. generation of tailing etc may also be considered for estimation of reserves & resources.

- Feasibility report should be kept in continuation of text at respective Para, as it is part of review of mining plan document. Please refer IBM manual for appraisal of mining plan 2014. Further, In the UNFC feasibility study, following important parameters are not dealt with:-
  - a. Assessment of IRR (Internal Rate of Return) and NPV for the project life.
  - b. IRR based on operating cost, reclamation/ rehabilitation cost, closure cost and other important parameters as per UNFC guidelines for the life of the project on the basis of ore body geometry, i.e., depth, width, length etc. as estimated and considered for reserve/ resource estimate.
  - c. Cash flow statement for the period considered for assessment of IRR.
  - d. Sensitivity analysis on cash flow due to market changes, i.e., cost of operation, sale price etc.
- Level of Exploration for Resources is estimated as +47% Fe whereas in the R & R table it is considered as +41% Fe.
- Geological reserves & Resources have to be shown in table to compare as per previous approved plan and as on now. How much reserve has increased or depleted to be explained. When compare with recent approved modification plan the resources has decreased slightly and 122 category ore has been converted to 111 category. There is no exploration, no mining activity, then how this much variation in R & R table. Area-wise G-1, G-2, G-3 category has to be shown and per year how much area will be converted from G-2/G-3 to G-1 by exploration during this plan period to be shown.
- Present pit dimension with length, breadth, RL, depth, benches in Ore & waste has to be shown in table format for all the existing pits & backfilled area. Number of waste and mineral reject dumps with size of each dump i.e. L X W X H and total quantity of waste material in the dumps has to be given.
- Detailed estimation table for reserves & resources as per UNFC has to be given in text. Minerals (Evidence of Mineral Contents) Rules 2015 has to be followed for exploration grid interval for UNFC reserves & resources estimation. Beyond & below the depth of boreholes, it should be considered as resources as per above said rule. Proposed boreholes to be shown in Geological plan & sections.
- The present exploration is not adequate and additional exploration has to be proposed in working pit also to know the existence of mineral as well as its UNFC compliance has to be planned. Exploration should be proposed upto G-1 level in entire mineralized area so as to satisfy the provisions of Rule 12(4) of MCDR 2017. Core boreholes have to be planned based on type of deposit and various intrusion etc. Many sections are not having sufficient Boreholes and many boreholes are in complete to find out the contact zone.
- Using single Boreholes or without boreholes, section has drawn and ore is considered as G-1. As per Minerals (Evidence of Mineral Contents) Rules 2015, it has to consider as resources only. Year wise Production proposed area has no sufficient boreholes to prove the G-1 category ore, hence the proposal area to be re-changed on the proved area.
- An attempt may be made to prepare slice plans for estimation of reserves & resources due to complex deposit with intrusion and shape of the mineralised zone etc. Refer

sub-para-k of Part-A Geology & Exploration of universal format for Mining Plan.

- Refer Minerals (Evidence of Mineral Contents) Rules 2015 for exploration grid interval to be followed for UNFC reserves & resources estimation, which indicates 200-100m or closer interval borehole spacing along strike for G-2 and 100m or closer interval borehole spacing along strike for G-1 category of irregular bodies. Geological section has to be drawn in closer interval of 50m due to complex deposit in nature.
- R & R table is not updated based on Geological plan & sections, i.e, Section-IX-A has +35 Fe % in sections, whereas in table it is not included.
- All boreholes should be marked with type, diameter, inclination, collar level and depth. Boreholes above pit bottom must be shown by hatched lines in sections and old boreholes hanging in air above the pit bottom are not required. Date of survey has not been updated. No signature of Surveyor in the plan.
- Feasibility report should be kept in continuation of text at respective Para, as it is part of review of mining plan document. Please refer IBM manual for appraisal of mining plan 2014.
- Common lease boundary permission is not enclosed and combine plan of both leases with their proposal has to submit for better understanding.

### **Mining:**

1. The documents for Modification of Mining Plan under the provision of MCDR, 2017 was prepared by four qualified persons. However the certificate has been signed by three qualified persons only. Supporting documents to prove qualifications and experiences to satisfy the provisions of Rule 15 of MCR 2016 of all the qualified persons who has prepared document should be submitted.
2. The document should be prepared as per IBM Manual for Appraisal of Mining plan 2014 .Therefore ,irrelevant paragraphs such as 3.7 to 3.9 to be deleted.
3. Please refer page no. 11 the table furnished for production and development for the last approved Mining Plan for the year 2016-17 and 2017-18.The quantity of Ore, Mineral Reject and OB/SB/IB furnished by indicating unit in thousands Tones whereas in other chapters it is furnished in Tones or Million Tones. To get better clarity and uniformity the quantities should be furnished by using uniform units of measurements at all places of the documents.
4. The achieved production and development for the last approved Mining Plan for the year 2016-17 was nil and for the current year 2017-18 till submission of documents is also nil. By stating that the lessee was unable to undertake proposed Development and Production as dewatering of mining pit common with the adjoining, Codli Iron Ore Mines of M/s Vedanta limited could not be achieved. In the current document also, it was observed that the mining activities have been proposed below the current water level. Therefore to achieve the required proposal of the current documents a mutual agreement/ action plan for dewatering the requisite water for hassle free mining from the adjoining lessee should be suitably furnished in the documents.
5. The reason for delay in the submission of modification of Mining Plan should be discussed in the documents. Achievement should be submitted till date only.

6. The Insitu tentative excavation as per Proposed Modification for the year 2017-18 as furnished in cubic Meters in the page no. 42 & 43 for the same proposal year are different. The same should be rechecked and furnished the correct figures. Also the waste to ROM ratio in both the cases were different. The same to be corrected or should be justified properly.
7. If there is no valid common boundary permission granted from DGMS, the Production and development proposal should be given by leaving the 7.5 m from the common boundary area. Therefore the Production and development plan and section for the proposed year 2017-18 should be updated accordingly.
8. It has been observed in the field that the series of dewatering pumps and pipes were laid in the field. The water flow channel also made which passing through the nos. of settling ponds. The Prod. & dev. Proposal for the current year of working has been proposed in the area. As the quantity of water discharged from the mines seems to be high, therefore the details of water management including change in surface features should be discussed in the text and new proposed location of pumps set should be shown in the proposal Plan.
9. The calculation for amount of financial assurance should be corrected the page no. 90 and difference amount of Bank Guarantee should be submitted along with final submission.
10. The surface dump was proposed between the sections XVA to XVIII. Whether the proposal is falling under mineralized or non-mineralized area to be clarified. For dumping in mineralized area the dumping should be of temporary nature.
11. The proposal area for surface dumping/active dumps should be marked in the plan with distinct color code from the old stabilized dumps.
12. The details of the employments including deployment of Statutory Personnel should be discussed.

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