

Scrutiny comments on examination of Modified Mining Plan with PMCP in respect of Odamolla Iron Ore Mine (T.C.No.45 of 1954) of M/s. SOVA over an area of 85.7295 Ha. Forest Land 80.2233 Ha. Non Forest Land 05.5062 Ha. situated in Sangod Village, Dharbandora Taluka , South Goa District of Goa State submitted under Rule 17(3) of MCR'2016 for the block period 2013-14 to 2017-18 and approval period of 2016-17 to 2017-18.

Cover page- The submission of Mod.in mining plan document should be under rule 17 (3) of MCR, 2016. The block period & approval period of Mod.in mining plan should be 2013-14 to 2017-18 & 2016-17 to 2017-18 respectively. It needs correction. The RQP certificate number is not required. Modify the text & certificate accordingly.

General-Page-4, the provision & name of QP should be under rule 15(1) of MCR, 2016. It needs correction.

Location & Accessibility: Page-5, the ownership of land area and type should be given as per form-I&IX land revenue record in text. The surface rights of land used for the plan period is presently held with lessee or not, is not discussed.

Page-6, The name of authorized person/ agency recognized by the state Govt., who had conducted the DGPS survey is not given in text. It should be discussed & justified about the lease area either addition/deletion, after DGPS survey.

Details of approved MP/SOM: The year wise production achieved & dump recovery in previous plan period should be matched & given based upon the annual return submitted to IBM only. The land used details/proposals should be matched with earlier approved mining plan.

The quality & quantity of excavated ore laying for auctioning by state Govt.should be discussed in brief if any. The remaining grade wise stock of auctioned ore available in mining lease area as on date should be mentioned. The reserves & remaining resources available & production achieved in previous plan period should be discussed & justified based upon the further exploration done if any. The substantial increase/decrease in reserves should be justified. It should be proposed the further exploration in remaining lease area as per Ministry of Mines direction /Mineral content rules 2016 guidelines in first year of present plan period.

It should be discussed in brief regarding any issues or encroachment or irregularity pointed out by Hon. Justice MB Shah Commission of inquiry to this mining lease/lessee, if any and comments made thereafter should be submitted in further submission along with supporting documents.

Page-9, Para-3.5, the violation & show-cause notices issued in previous plan period & their reply should be discussed & enclosed in the form of annexure. The mine was suspended under rule 45 of MCDR, 88 & their revocation should be discussed.

The feasibility report should be suitably linked to the reserves estimated with latest economic parameters and it should be discussed regarding viability of project should with conclusion. The intrinsic cash flow of project should be given in tabular form.

1) Geology and Exploration:-

- i) The number of ore bands present within the lease area with dimensions and dip and strike of the formation is needs to be discussed in the geology of the lease area.
- ii) Thickness of the different litho units exists within the lease area may be discussed.
- iii) In the review chapter it is stated that it was proposed to drill 30 boreholes during plan period and no exploration was carried out as per the proposal. But number boreholes drilled so far is mentioned as 106, as per the approved mining plan lessee has drilled only 68 boreholes with total depth of 4140.3mtrs and no exploration has been carried out thereafter as per the office records and as mentioned in the draft copy. Hence number of boreholes drilled so far needs to be corrected. The number of boreholes drilled so far and meterage should be corrected at page no-13 and all relevant pages also.
- iv) Under the heading exploration already carriedout the area explored under G-1, G-2, and G-3 level of exploration and area to be explored needs to be discussed.
- v) Log sheets of all the boreholes which are considered for estimation of reserves/resources needs to be enclosed.
- vi) Latest Chemical analysis for Ore, subgrade, mineral reject and waste analyzed from NABL accredited lab should be enclosed.
- vii) At page no 16 mineral reject is mentioned as intercalated waste in the ore zone, but mineral reject is not an intercalated waste, it is chemically subgrade and below the cutoff grade and above threshold value. So intercalated waste should be mentioned as waste rock only and not as mineral reject. Same should be corrected in all relevant pages.
- viii) The entire mineralized area should be explored as per the Ministry of Mines guidelines. The time limit for exploration should be followed as per the guidelines, and proposals should be made as per Minerals (Evidence of Mineral Contents) Rules-2015.
- ix) In the approved mining plan reserves were mentioned as 7770532 tons as on 25.05.2008 and in present submission mineable reserves are mentioned as 14632558 tons and remaining resources as 1517822 tons. How reserves/resources were increased without doing any exploration needs to be justified with evidential support.
- x) Reserves/resources should be estimated grade wise separately for lumps and fines as per UNFC norms by taking threshold value declared by Indian Bureau of Mines as per 2009 notification.
- xi) Extension below the drilled borehole cannot be considered for estimation of reserves. Further based on single boreholes reserves and resources may not be estimated.
- xii) In some sections it is observed that thickness of the ore body and extension is shown more with single borehole data, this need to be rechecked and corrected.
- xiii) In section K-K' and L-L' Quantity of ore is estimated under proved category without having any borehole data and ore body is projected without much exploration data. So reserves estimated from the sections K-K' and L-L' cannot be considered.

Geological plan and cross sections:-

- i) Surface Geology should be shown for entire lease area except dump and backfilled areas. On Geological cross sections geology should be shown boundary to boundary.
- ii) Dip and Strike of the formation is not shown properly on the surface geological plan. iii) Area explored under different level of exploration and reserves/resources estimated under different UNFC classifications are not marked on Surface geological plan and cross sections.

iv) Ultimate pit limit is not marked on geological plan and cross sections. v) Lithology shown on Geological plan and cross sections are mismatching. vi) Collar level, depth and inclination of the drilled borehole should be marked on Geological plan and sections. vii) Boreholes which are projected above the bench profile needs to be shown in dotted line. viii) On the plates the term scheme of mining should be mentioned as plan period.

Mining:- A small introductory para of existing pit dimension, dumps (only with in lease area) with number of benches in ore & waste, EC limits, Annual capping, nearest distance from WLS/NP etc. should be given. Page-18,19,20,21 Instead of referring plate no. of mining proposal in plan & conceptual period, same should be discussed in table & text with latitude, longitude, top & bottom RL, area etc.

The annual ROM production quantity with tentative grade of excavation should be given as per manual of appraisal of mining plan 2014, based on IBM threshold value of hematite ore is +45%Fe & +35%Fe for siliceous ore.

The above threshold (+45%Fe) & below cut off grade (i.e. +55%Fe) should be given separately as mineral rejects/subgrade in proposed column in table instead of entire ROM shown. It needs correction & modified the table. The total proposed ROM should not be more than annual capping limit. The production proposal for the year 2016-17 should be discussed & optimized/modified since 2016-17 is almost over. As per communication received from DMG, Goa, a production capping of 0.338 MTPA has been allocated to this lease. Therefore, production should be restricted to 0.338 MTPA. Relevant corrections may be made at all the pages.

The year wise proposed production & development section wise calculation tables should be discussed & given. The copy of all permission from DGMS/SPCB/Scientific body etc. should be enclosed.

The year wise proposed approach road up to working faces should be discussed. The year wise proposed production & development benches should be shown by leaving 100m safety distance from existing dump/pit edge as per DGMS guidelines.

The % of Fe content in overburden/waste analysis should be as per threshold value of IBM only for hematite ore is +45%Fe & +35%Fe for siliceous ore. Latest few more samples of waste rock in proposed area should be analysis & submitted in further submission. The dumping/backfilling on mineralized ground/within UPL should be temporary nature only.

Dump re-handling (For purpose of recovery of minerals) - The tentative quality & quantity of existing dump with in lease area should be given in tabular form. The chances of recovery of ore, if any in future should be discussed.

The bulk density considered for ore and waste also needs to be indicated. The 100% recovery of ore should be discussed and justified in plan & conceptual period. The total proposed ROM should not be more than annual capping limit.

Page-21, The land use details should be mentioned as on 01.4.2016, plan period up to 31.3.2018. It needs correction.

Page-22, The optimum/overall pit slope should be discussed & justified based on scientific study done etc. The breakup of hired & own HEMM used in mine should be discussed & given separately.

Page-23, Mine drainage- An abstract of copy of hydrological report should be enclosed in further submission if any. The minimum & maximum depth of water table from present pit bottom should be discussed. The inrush & outgoing water management & safety precaution measures with respect to man & machineries of downward pit/area should be discussed.

Page-25-26, Para-4.0 to 5.0, The overburden/waste & mineral reject are different. It should not be treated as same. The above threshold (+45%Fe) & below cut off grade (i.e. +55%Fe) is mineral reject/subgrade & below threshold value is waste. The table should be modified in relevant places in document. It should be discussed in brief regarding utilization of MR/sub grade ore, (+45%Fe to -55%Fe) because as per buyers specification subgrade is not desired for use.

Page-29-The adequacy & time bound commitment for appointment of statutory manpower/ organization chart should be given as per MMR, 1961/MCDR, 88.

Page-29,34-PMCP- The land use details should be mentioned as on 01.4.2016, plan period up to 31.3.2018 & conceptual period up to 21.11.2027. The proposal up to conceptual stage as given in conceptual plan should be discussed in tabular form in text also.

The monitoring schedule of all environmental components should be given with respect to permissible limits & actual parameter in tabular form. The location of different monitoring stations as per IBM/MOEF guidelines for EMP and frequency of monitoring may be discussed in text.

All protective measures should be mentioned specially towards pit down-stream/village area/ waste dump washed off & stabilization of dump should be proposed during plan period.

Page-40-The existing/proposed location of protective measures should be mentioned in text & in tabular form.

Page-42, The updated organization chart for disaster management plan should be given with name, designation & contact numbers of authorized person, their duties and responsibility.

Page-44, The financial assurance in the form of valid bank guarantee for next two year of plan period should be submitted in further submission. The break-up of land used details should be matching with surface plan/ financial area assurance plan.

All plan and section, text & tables should be modified based upon above scrutiny points and should be duly signed by qualified person or authorised persons on each page. The further submission of document should be properly binding having sufficient strength and the plates are properly folded so that they can be accessed easily

Plan & sections:

Key Plan: Land use status i.e. Govt. land, private land & forest land etc. must be shown by different colour code.

DGPS plan- It should be mentioned about the path row of the satellite and date of pass of DGPS survey. The soft copy of full set of auto generated files of super imposed output or text file etc. should be enclosed in further submission.

Surface Plan: The adjacent lease area features should not be shown, only instant lease area surface features should be shown by effective colour code. The plan should be modified by showing effective large text font, RL, mineralized & non-mineralized area line, forest boundary line, water logged pit area, HT power line & their capacity, mineral reject/subgrade & auctioned ore & different roads should be clearly shown by different colour code to distinguish properly. The surface plan should be certified by mine manager also with name & date. The type of land as agriculture; grazing, waste etc. should be shown.

Production & development plan & section- All scrutiny as pointed out in surface plan should be attended & shown effectively. Adjacent lease area features/ proposals should not be shown. The proposed location of year wise temporary dumping, working sections with benches & levels etc. should be shown properly on plan & section and should be discussed in text. The yearly advancement of approach road should be shown on proposed workings & dump area. The copy of common boundary working permission under MMR, 1961 & their validity may also be discussed with supporting documents. The proposed working area, pit should be 100m away from existing dump edge as per DGMS guidelines.

Environment Plan: It should be highlighted & large font of the existing environmental protective measures/reclaimed area. The plan should be prepared as per rule 28(5)(b) of MCDR 88 to show other detail population, village boundary, types of land etc.

Conceptual plan- The land use table as on 01.4.2016, plan period up to 31.3.2016 & conceptual stage up to 21.11.2027 with different colour code should be given & correlated with text. The other relevant feature as discussed in surface plan/production & development plan & text should be attended

Reclamation plan- all existing/proposed protective measures should be effectively shown as discussed in field & as per manual of appraisal of mining plan 2014. The other relevant feature as discussed in surface plan/production & development plan & text should be attended.

Financial assurance area plan: The land use table as on 01.4.2016, plan period with different colour code should be given & correlated with text. The break-up of area should be matching with text & separately demarcated. The other relevant feature as discussed in surface plan/production & development plan & text should be attended.

Annexure:

1. The latest chemical analysis report from an NABL accredited Laboratory of proposed mine workings, existing dumps & waste, mineral reject should be submitted in the form of annexure. The enclosed analysis report is old i.e.12/3/2014 without having location of sample etc.
2. The copy of resolution of Board of directors should be submitted in further submission.
3. The latest copy of Form-I&IV should be enclosed in further submission in the form of annexure.
4. Photographs of present mine workings, all corner pillars as per new guidelines with number, RL, latitude and longitude marked on it should be submitted in the form of annexure.

5. The copy of original borehole logs should be submitted in further submission.
6. Latest quarterly monitoring report on air, water & noise should be enclosed on survey agency letter head duly signed by authorized person.