

Scrutiny comments on the draft Modification in Approved Mining Plan along with Progressive mine closure plan of Jalim Sanai Bauxite Mine over 38.45 hectares of M/s. Hindalco Industries Limited, in Jalim & Sanai villages of Gumla District, Jharkhand State submitted under Rule 17(3) of MCR 2016 and 23 of MCDR 2017 for the period from 2021-2022 to 2022-2023.

General:

1. Certificates: Word 'lessee' should be used instead of 'applicant' in case of existing lease. As per IBM manual for appraisal of mining plan 2014 all the certificate should have the original signature of Lessee and Qualified person who has prepared the mining plan. Approved plan period to be mentioned in the cover page. Lease period is wrongly shown. FMCP approved area and lease area decimal to be corrected.
2. CCOM circular no. 2/2010 addendum, regarding ML boundary pillars to be implemented. During inspection it has noticed that boundary pillars are not erected as per standard and Boundary pillar- 14 & 17 have been shifted.
3. Reason for submitting Modification in the Approved Mining Plan under Rule 17(3) of MCR, 2016 to be justified.
4. It has been observed in the field that few pillars are not matching with its ground position. Therefore, the document shall be prepared afresh strictly as per the co-ordinates in the mining lease deed with subsequent revision in the chapter on Geology, Mining, and PMCP along with the relevant plans & sections. The document needs to be prepared for the entire ML area (38.45 ha.) clearly as per the supplementary ML deed executed with the State on 11.4.2017 and a brief note/ chronology of the events with supporting documents need to be mentioned in the Introduction chapter.
5. Brief lease history, Status of all statutory clearance obtained or to be obtained and Surface right acquired should be given in introduction along with documentary proof as enclosure. Distance of ML from protected area/wild life sanctuary etc. to be mentioned accurately in introduction.

Location and accessibility:

1. Corner boundary pillars erected are not as per the standard procedure envisaged in MCR 2016. Few observed co-ordinates in the field i.r.o the ML area/ area applied for surrender, doesn't match with the co-ordinates as mentioned in the submitted plans/ text; hence needs correction along with the land schedule as per the deed executed with the State Govt.
2. In the previous approved plan 2017, the lessee has certified that DGPS survey has been implemented and complied, whereas more than 3 years has passed till the Lessee has not submitted the DGPS plan. The copy of DGPS plan duly submitted to State DMG for authentication should be discussed & given with supporting documents.

Details of approved Mining plan/ Scheme of Mining:

1. The reason for modification is not clear & is not-acceptable. Therefore, the reason for modification needs to be spelt out clearly in the document.
2. Para.3.3:- Proposed plan period is not needed to show under review of earlier approved mining plan. Cumulative quantity of waste is shown, but details of Lateritic soil, OB/SB/IB and quarry waste is not discussed properly.
3. The year wise production & development quantity should be updated & given till date based on statutory annual/ monthly returns submitted to IBM & deviation should be justified. The proposed

& achievement should be mentioned as per approved plan proposal i.e. Latitude & Longitude/ RL etc. & actual workings done should be discussed in tabular form with proper justification.

4. Under review of earlier approved mining plan there is no discussion about quarry waste quantity. How much quantity has been achieved against 7178 cu.m proposed in modification in approved mining plan to be discussed.
5. Page-9:- During 2018-2019, 42125 cu.m of waste has been generated and reclaimed 0.36 hectares, whereas during 2020-2021 it has reclaimed 0.66 hectares with 29798 cu.m of waste it need to be explained.
6. Location of proposed and achieved afforestation to be discussed in table format.

Geology:

1. The topography of the lease area is not discussed properly. The elevations within the lease area and nature of the land are not discussed properly. Highest and lowest RL is mismatching with plan & text.
2. 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.

Total Lease area:						
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.
	Total Lease area = A+B+C+D+E					
	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						
Reserve estimated after above exploration as on dated :						
Remaining Resource after above exploration as on dated:						
Total Reserve/ Resource after above exploration as on dated:						

3. The Grade of reserves has increased when compare to approved plan to be discussed. Instead of 01.06.2021 it is mentioned as 01.04.2015.
4. UPL has to proposed upto proved depth only. No extrapolation of extreme borehole has to be considered for estimation of reserves & resources. Beyond & below the depth of boreholes, it should be considered as resources.
5. In Reserves and Resources calculation sheet, thickness of Borehole JSN-8 is increased from 3.5m to 4.5m when compare to valid approved plan.
6. It is incorrect to consider category 111 without or with one borehole based on lithology on section. Lateral and vertical extrapolation of maximum 25% of grid interval i.e. 12.5m beyond the borehole may be considered for G-1/G-2 category.

7. Existing Boreholes are insufficient to prove the quantity and quality of Bauxite deposit. The remaining lease area should be proposed during this plan period to cover under exploration to quantify reserves/ resources with cutoff grade corresponding to threshold value suggested by IBM within one year plan period as per Rule 12(4) of MCDR 2017.
8. Borehole influences are considered for Reserves estimation by 50m spacing, based on that single borehole will have 2500m², whereas Borehole JSM-11 & 14 are having more than 4000m². Hence reserves & resources are to be re-estimated.
9. Reserves & Resources table are mismatching with page to page. 221 categories have been shown in page-20, whereas in summary table it is not shown and mentioned as 211 categories. Explain how the 221 category has converted to 211 categories.

Mining:

1. Production planning is silent on grade of ore to be produced, cut-off grade for sale of ore, reject generation and its stacking. Nature of waste and mineral reject describing the lithology has not been mentioned. Need to furnish the same.
2. Present pit dimension with length, breadth, RL, depth, benches in Ore & waste has to be shown in table format for all the existing pits. Number of Dumps/ stocks of waste, Sub grade/ mineral reject, processed ore etc with size of each dump i.e. L X W X H and total quantity of waste material in the dumps for recovery of salable grade ore, if any in future and its basis has to be given.
3. Proposal of development & production, waste management, reclamation & rehabilitation, afforestation are to be shown on individual year-wise plan & sections. Another table or column in existing table may be incorporated indicating B.D. and tonnage for ROM Bauxite.
4. Mining is proposed in the unexplored area; hence without proved reserves, mining cannot be carried out. Mining proposal has to be change after resources has converted to reserves.
5. Exploration may propose in current year to find out the Quantity and quality of the deposit, based on that production plan may be re-designed.
6. Land use pattern of existing, proposed plan period and after life of mine to be shown with bifurcation of forest and non-forest area. Yearwise proposed land use pattern to be given.
7. Para 2 (f):- Conceptual mine planning may be end of lease period. Generation of Production, wastes and their location of disposal, afforestation and other protective measures during conceptual period have not been discussed. Incorporated tables of proposed mine development, location of disposals of wastes, afforestation and other environmental protective measures during Modification in Approved Mining Plan period (i.e. year 2021-22 to 2022-23) need not necessary under this para.

Stacking of Topsoil, Mineral Reject and Disposal of waste:

1. Concurrent backfilling, capacity & precaution envisaged have not been explained properly. Backfilling of waste from year to year to be mentioned in text (with ref. to RL of individual area) and total height of the backfilled area year wise with description of the method & manner of disposal of waste should be mentioned.
2. Proposal for protective works to be carried out year wise around backfilled area with design details & materials to be used for its construction should be given taking in to consideration average rain fall in the area.

PMCP:

1. Few photographs of the ground control points, working area, dumps, afforestation on dumps, mineral stacks of different grade, pits and tailing pond showing baseline information as on date

may be enclosed. Human settlements and public buildings, places of worship and monuments within core zone have to be given.

2. In valid approved plan under Financial Assurance table, area considered as fully reclaimed and rehabilitated is 7.33 hectares, whereas recent draft submission also shows 7.33 hectares are fully reclaimed. Its need to be explains.
3. The table in Para 8.3 for year-wise proposals for reclamation & rehabilitation is mismatching with five-year proposals. Separate year-wise proposals are required for applicable items under PMCP. Table given in IBM manual for appraisal of mining plan 2014 is having format for yearly report under rule 26 of MCDR 2017 and it needs suitable modification for year-wise proposals to be included for next five-year period. It is therefore advised to delete the column 'Actual' as well as non-applicable rows for proposals i.e. cumulative number of plants in dump management, afforestation done and cumulative number of plants in management of worked out benches etc.
4. It is proposed to backfill the 0.51 hectares with 31432 cu.m during 2021-2022, whereas during 2022-2023 it is proposed to backfill the 0.49 hectares with 19715 cu.m. its need to be explain.

PLATES:

1. Cadastral lease map has to be certified from competent officer of state forest department for extent of forest land or copy of forest clearance approved from MOEFCC has to be enclosed.
2. DGPS Plan: the copy of DGPS plan duly authenticated by state government is not submitted.
3. As per Rule-35(2) of MCDR, 2017, high resolution satellite images obtained from CARTOSAT-2 satellite LISS-IV sensor on the scale of cadastral map, covering the mining lease and an area of 500 meters from the lease boundary, should be submitted along with the document.
4. Surface Plan: updated surface plan is not enclosed. 7.5m safety barrier along the lease boundary has to be shown in all plan and safety zone also to shown. Based on field inspection, it was noticed that safety barrier has not maintain for forest area within lease area. Surveyor and mines manager signature is needed in this plan. Boundary pillars along with its Latitude & Longitude values to be included.
5. Surface Geological Plan & sections: Geological plan & section should be drawn based on exploration has been carried out. UNFC codes should mark in Geological plan & sections. Sub surface resources can't be projected on plan under UNFC category. UNFC codes have to be described in text also. 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. All sections Lateral and vertical extrapolation of maximum 25% beyond the borehole is allowed for G-1/G-2 category; accordingly all the sections may be modified for showing UNFC reserves category. UPL is not visible. Geologist signature is needed in this plan and section.
6. Geological section is not updated as per Geological plan, i.e, Borehole JSN-8 & 9 is already mined out and backfilled but in section till it shows ore under 111 category. As per plan, section line G-G' and H-H' is not having any Bauxite ore under 111 category. Section line G-G' shows borehole JSM-5 is not having any ore, whereas same borehole in section line C-C' shows ore under 111 category.
7. Production & Development planning: Section should be drawn as per Geological Section. Proposal of plantation, check dams, retaining wall, drainage channel, dumping etc may also be included on the year-wise plan & sections. Other scrutiny comment given in text has to be suitably reconciled.

Production proposal for the year 2021-2022 is not having proved ore between Quarry-4 and borehole JSN-4, JSN-1and JSM-14. During 2022-23, also proposed in same area. Hence the entire working proposal to re-design and to be proposed as per exploration data only.

8. The environment plan shall be clearly about as per Rule 32(5) of MCDR 2017 duly covering the 500m all around the lease. Dhobghat Nalla flows at about 300m from the southern boundary is not shown.
9. Financial Assurance plan: Different colour code has to be used for pit, infrastructure, mine road, backfilling etc by showing outlines of the existing working pits, dumps, mineral stacks, roads, virgin unused area etc covering all the items under the financial assurance table as on 01.04.2021 and at the end of plan period for the purpose of computation of the areas required to be used in that period to verify the financial assurance. Table showing area considered for financial assurance under different activities should be given. In the FA only the present & future land use shall be indicated clearly delineating with proper colour code, the present & future land requirement under different working heads.
10. Conceptual Planning: It has to be prepared by including five-year block wise proposals for development, waste management, reclamation & rehabilitation, afforestation etc up to the lease period instead of tentative final pit limit at the end of lease period. Longitudinal and transverse sections are required in support of conceptual planning. Other comments may be suitably reconciled. Conceptual Mine plan upto the end of lease period has to be prepared on the base Geological plan and sections considering the present available reserves and resources by showing the excavation, disposal of waste, backfilling of voids, reclamation and rehabilitation, afforestation etc.
11. Reclamation plan: It should be prepared by including proposals of progressive mine closure plans i.e. reclamation & rehabilitation, afforestation, garland drain, retaining wall etc.
12. The mine surveyor shall sign all the statutory plans and a copy of his certificate to be enclosed.

Annexure:-

1. The clear and legible Xerox copy to be enclosed for all annexures.
2. All the annexure to be properly indexed/numbered/paged and signed by the TQPs.
3. The copy of original valid BG of requisite amount should be submitted in the form of annexure along with original.
