

Scrutiny comments on the draft Review of Mining Plan along with Progressive mine closure plan of Amtipani Chirodih Bauxite Mine over 130.01 hectares of M/s. Minerals & Minerals Limited, in Amtipani, Chirodih & Bahagara villages of Gumla District, Jharkhand State submitted under Rule 17(2) of MCR 2016 and 23 of MCDR 2017 for the period from 2021-2022 to 2025-2026.

General:

1. Certificates: Word 'lessee' should be used instead of 'applicant' in case of existing lease. Details of Forest/ Non-Forest to be mentioned in cover page.
2. 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.
3. The co-ordinates of boundary pillar No. BP-8 & BP-9 shown in the surface plan (as on 15.12.2020) & the area plan, submitted with the present document, is not matching with the co-ordinates of the respective boundary pillar, as per the mining leases deed executed with Govt. of Jharkhand on 11.1.2017. 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.
4. The Review of Mining Plan has not been submitted for approval at least one hundred and eighty days before the expiry of the five years period for which it was approved on the last occasion, for mining operations for a period of five subsequent years. Approved modification in approved Mining plan was valid upto 31.03.2021. Reason for delay in submission to be given.

Location and accessibility:

1. Corner boundary pillar erected are not standard procedure of MCR 2016. Co-ordinates of all the boundary pillars to be enclosed based on DGPS co-ordinates only.
2. Details of forest and non-forest land details within lease area are not given, whereas Key plan shows that area falls on Protected Forest area. Its need to be explained.
3. As per land scheduled enclosed in lease deed, i.e Survey Number-511, 1037 of Amtipani village has shown under Rasta category, whereas in lease map, road is not shown. Hence justification is need in this. Same has been repeated in few more survey numbers also.

Details of approved Mining plan/ Scheme of Mining:

1. The year wise proposed exploration, excavation & afforestation should be shown in table format. 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.

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.
2. Under Geology of the lease area type of the deposit, shape and size of the ore body, structural features if any needs to be discussed. Dip and strike of the formation may be mentioned in whole circle bearing.
3. 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. Based on Cut-off grade/ threshold value (i.e. revised threshold value) may also be considered for estimation of reserves & resources. Recovery of mineral should be established from recognized laboratory. Refer Minerals (Evidence of Mineral Contents) Rules 2015 for exploration grid interval to be followed for UNFC reserves & resources estimation.

4. 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:						

5. Reserves have been reported under 122 category, where-as no pre-feasibility report has been submitted. The resources shall be drilled down into the reserves & resources strictly as per the norms of UNFC with all relevant supporting documents i.e pre-feasibility report. The geological plan & sections shall clearly show the correct UNFC code.
6. The complete lease area should be proposed under the 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.
7. Proposed exploration are not adequate and additional exploration has to be proposed to know the existence of mineral as well as its UNFC compliance has to be planned. Core boreholes have to be planned based on type of deposit and various intrusion etc. As per Minerals (Evidence of Mineral Contents) Rules 2015, proposed borehole spacing along strike may be kept 50m or closer interval.
8. The submitted document indicates that Bauxite ore above 49% Al₂O₃ exists within the ML area as per the thresholds of IBM. Whereas as per borehole log, 39% Al₂O₃ also has been considered as Reserves.
9. UPL has to proposed upto proved depth only. No extrapolation of extreme depth has to be considered for estimation of reserves & resources. Beyond & below the depth of quarry, it should be considered as resources as per above said rule.
10. Pit No.ATP/33/E/1 is having two different lithology, RL and thickness.

Mining:

1. As per State Govt. order no.B.M4-1047/94 the lease is granted under the provisions of Section 10 A (2) (c) of the MMDR Amendment Act 2015. Since lease is granted under Section 10 A (2) (c) of the Act, a Mine Development and Production Agreement should have been signed between the lessee and the State Government. Details of such agreement need to be discussed and copy of said agreement is to be attached. Production proposals should be drawn in line with MDPA Agreement.

2. 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.
3. Proposal of five year 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. Describe briefly with calculation for adequacy and type of machinery and equipment proposed to be used in the lease for different activities of drilling/ripping, total handling in development and production, surface transportation and any other ancillary operation. Drilling and blasting has proposed in subgrade, whereas same has not discussed in Geological Reserves and Mining chapter also. Subgrade is included in both development and production also to be discussed.
5. 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 RMP period (i.e. year 2020-21 to 2024-25) need not necessary under this para.

Mine drainage:

1. Minimum and maximum depth of water level is not given based on own monitoring of nearby wells and water bodies or based on studies/ publications of CGWB/ SGWB.
2. Ambiguous statements are used for different sub-para of mine drainage i.e. minimum and maximum depth of water level, quantity & quality of water likely to be encountered (seepage as well as discharge), pumping capacity and Regional & local drainage pattern w.r.t. Koyel river.

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.
3. Instead of Quarry waste, it can be mentioned as mineral reject. It is proposed to storage of mineral reject during this plan period, but there is no such discussion about blending or backfilling the mineral reject.

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. As per State Govt. order no.B.M4-1047/94 the lease is granted under Section 10A(2)(c) of the MMDR Amendment Act 2015. Details of Mine Development and Production Agreement signed between the lessee and the State Government is to be mentioned. If MDPA not signed, FA should be submitted as per provisions laid down under Rule 27 of MCDR 2017.

PLATES:

1. Key plan:- Land use pattern i.e. forest, waste land, agriculture land etc is not shown as per rule 32(5)(a) of MCDR 2017. Excluded lease area is not shown, Lease boundary is shown differently. The prominent features existing in core and buffer zone to be shown. Lease area should be

bounded by all sides showing latitudes and longitudes of extreme four points. Village road is passing towards southern side of lease area nearer to boundary pillar -122, whereas in lease map same road is passing nearer to boundary pillar-125.

2. Cadastral lease map has to be certified from competent officer of state department has to be enclosed.
3. Surface Plan: RL differences is there, when compare to previous approved plan, i.e, Boundary pillar-131 is on 1060m RL as per approved plan and as on date it is 1070m RL. Date of survey i.e.26.02.2021 is too old and needs updation. During inspection it has noticed few heaps are present and road is diverted are not shown.
4. Surface Geological Plan & sections: Geological plan & section should be drawn based on exploration has been carried out. UNFC codes should marked 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. Contour line and its level are not matching with Borehole logs i.e, Borehole ATP/25/W/1 has been drilled in 1071m RL and now it is projected in 1066m RL. Sections are not having any other lithology. Geologist signature is needed in this plan and section.
5. Five-year planning: Separate year-wise plan and sections on a scale of 1: 1000, may be of part area has to be prepared for better representation of all features. 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 ore above 1065mRL on section-E. Ore is not available in between 1065mRL to 1070mRL as per trial pit ATP/35/E/3 and the proposed area is having Laterite for first year production proposal. During 2022-23, it is proposed to work in Quarry-2 based on exploration of ATP/33/E/1, whereas two different lithology and logs are enclosed as annexure. Production proposal for the year 2024-2025 is not having ore above 1056mRL on section-B. Trail pit collar RL is 1053m, whereas working is proposed upto 1056m only. Hence the entire working proposal to re-design and to be proposed as per exploration data only.
6. The environment plan shall be clearly about as per rule 32(5) of MCDR 2017 duly covering the 500m all around the lease. Lease boundary is shown differently. Existing natural vegetation as well as afforestation done over dumps with trees density per hectares is not shown. Instead of applied lease boundary, it should mention as lease boundary. Nalla passing inside the lease area is not shown as per lease map
7. Financial Assurance plan: Different colour code has to 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.
8. 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.

9. Signature of Lessee, Mines manager & Geologist are missing in few plan. The mine surveyor shall sign all the statutory plans and a copy of his certificate to be enclosed.

Annexure:-

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