

Scrutiny comments on the Review of Mining plan along with Progressive Mine Closure Plan of Serka - Serengdag Bauxite Mine over 59.88 ha of Shri Umesh Prasad Agarwal, located in village Serka & Serengdag of Bishunpur & Ghaghra Taluk/P.S. of Gumla District submitted under rule 17(2) of MCR, 2016 and 23 of MCDR, 2017 for the period from 2020-2021 to 2024-2025.

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. There are typographical mistakes while furnishing page number of annexures in the text of various plates, same should be checked.
2. Lease has executed for 63.25 hectares whereas in cover page and text it is mentioned as 59.88 hectares.
3. When a lessee is unable to commence the mining operations within a period of two years from the date of execution of the mining lease or discontinuation of mining operations for reasons beyond his control, he may submit an application to the State Government, explaining the reasons for the same, at least three months before the expiry of such period of two years as per MCR 2016, of Rule-20, Section-3 or under MMDR-2015 under Section -4A. The copy of the letter & Order of notice from state government may be enclosed.
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 Review of Mining plan was valid upto 31.03.2020. Reason for delay in submission to be given.
5. In the previous approved plan dated 03.08.2017, the condition has mentioned to compliance of CCOM's circular No.2/2010 within 3 months, whereas more than 3 years has passed till the Lessee has not submitted the compliance.

Location and accessibility:

1. As per land scheduled enclosed in lease deed, i.e 3.37 hectares are under Forest land, whereas in cover page it is shown as only nil forest land. Hence justification is need in this.

Details of approved Mining plan/ Scheme of Mining:

1. Proposed development quantity differs from approved mining plan. The proposal should be mentioned as per approved plan proposal.
2. The review of compliance of violation pointed out by IBM during last 5 years is not discussed properly. Violation from 2007 is not needed to discuss.
3. The mine is suspended under task force inspection on 21.04.2013 and till date the lessee have not applied for revocation to IBM. The reason for delay may be explained.

Geology:

1. 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.
2. 19 DTH boreholes have been drilled not in uniform grid. But it is mentioned as 100m x 100m grid interval. Hence it should be changed. Depth of Quarry shown in page-22 is differs from field observation.
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. Test result on moisture contents may also be included. Based on Cut-off grade/ threshold value (i.e. revised threshold value) may also be considered for estimation of reserves & resources. Refer Minerals (Evidence of Mineral Contents) Rules 2015 for exploration grid interval to be followed for UNFC reserves & resources estimation.
4. Mine is nonworking from 2012, there is no changes in Reserves & Resources compared to previous approved mining plan, whereas average grade and threshold value has been changed which should accordingly be considered.

5. 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:						

6. Using single Boreholes or without boreholes or DTH borholes, section has drawn and ore is consider as G-1, as per Minerals (Evidence of Mineral Contents) Rules 2015, it has to consider as resources only. Based on the DTH borehole reserves cannot be estimated. Therefore additional exploration by the way of Core drilling has to be proposed upto depth of mineralization.
7. UPL has to be 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 as per above said rule.
8. Borehole influences are considered for Reserves estimation by 50m spacing, based on that single borehole will have 10000m², whereas BH-3 is having 10232 m² and BH-6 is having 9903 m². Hence reserves & resources are to be re-estimated.
9. 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 two years plan period as per Rule 12(4) of MCDR 2017. 21 boreholes have been proposed in the previous plan period and no borehole has been drilled. Same borehole has been proposed in the present plan period.
10. Para.1.0 (e)(iii): Summary of the chemical analysis for major radicals discussed in this para are differ in page-38.
11. Para 1.0(j): The area under G-1, G-2, G-3 and G-4 may be given in a tabular form based on the exploration carried out in the past.
12. Para 1.0(l): Mineral resources may be estimated based on the level of exploration, with reference to the threshold value of minerals declared by IBM in tabular form.

Level of Exploration	Resources in Million Tons	Grade
G1- Detailed Exploration		
G2- General Exploration		
G3- Prospecting		
G4- Reconnaissance		

Mining:

1. Present pit dimension with length, breadth, RL, depth, benches in Ore & waste has to be shown in table format for all the existing pits & dump area. 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.
2. As per Geological plan, Quarry-1 has basement of Bauxite ore and there is no proposal for mining in that area to reach the basement of clay.
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. Para 2 (f):- Conceptual mine planning may be end of lease period. The chance of enhancement of reserves after exploration may also be mentioned. 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) is not necessary under this para.
5. Page-58:- Under land use pattern during 2021-22, 1.37 hectares will be backfilled by 58443 cu.m of OB & waste, whereas during 2023-24, it is proposed to backfill 132759 cu.m of waste & OB in 1.39 hectares.
6. Land use pattern shown in Page-58, present backfilled area 1.78 hectares and 5 years proposed area 8.17 hectares, whereas total difference is there in after 5 years plan period. Its need to be clarified.
7. The mine is not having any valid EC and proposed production from 2020-2021 onwards. Whether it is possible to work from first year.

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.
3. Seasonal garland channel has to show in year wise production & development plan and dimension to be mentioned under PMCP table.

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. Existing rehabilitation and protective measures taken around backfilled area like Retaining Wall, Garland Drain, Check Dams, Settling tanks, plantation etc. should be given in quantified terms.
3. 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. 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.

PLATES:

1. Cadastral lease map has to be certified from competent officer of state department has to be enclosed.
2. DGPS Plan: the copy of DGPS plan duly authenticated by state government is not submitted. As per CCOM circular no.2/2010, DGPS map shall be superimposed on Geo-referenced vectorised cadastral map is not enclosed. The boundary pillars along with co-ordinates value should be mentioned.
3. Key plan:- The prominent features existing in core and buffer zone to be shown. Forest area falls on the northern side of lease area.
4. 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.
5. Environment Plan: Following details may be include i.e. forest land, government land, private land, pits etc within 60m distance and within 500m distance as per rule 32(5)(b) of MCDR 1988. Existing natural vegetation as well as afforestation done over dumps with trees density per hectares is not shown. Refer Para 4.4.4 of IBM manual for appraisal of mining plan 2014. Adjoining lease area of M/s.Hindalco is not shown.
6. Surface Plan: Surface plan is not updated; hence date of surface is 18.02.2020. 7.5m safety barrier along the lease boundary and road has to be shown in all plan and safety zone also to shown. Surveyor and mines manager signature is need in this plan.
7. Surface Geological Plan & sections: 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. Excavated boreholes are not needed to show. 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. Few sections are having only 2 boreholes and few sections have no boreholes, however category G-1 is consider for reserves. UNFC codes have to be described in text also. Geologist signature is need in this plan and section. Lithology and UNFC codes are incomplete in all sections. Section lines are not drawn in uniform grid interval. Safety barrier to be mark for the Road/ electrical line passing inside the lease area and it should be considered as resources and to be mark in sections also.
8. Five-year planning: Proposal of plantation, check dams, retaining wall, drainage channel, dump rehandling etc may also be included on the year-wise plan & sections. Section should be drawn as per Geological Section. Other scrutiny comment given in text has to be suitably reconciled.
9. Financial Assurance plan: Different colour code 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 01.04.2020 and at the end of 5 year plan period for the purpose of computation of the areas required to be used in that period to verify the financial assurance.
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.

Annexure:-

1. The clear and legible copy of the address and identity proof to be enclosed.
2. All the annexure to be properly indexed/numbered/paged and signed by the TQPs.
3. English translation of Lease grant letter (Annexure-1), CO report (Annexure-8) to be enclosed.
4. Latest quarterly monitoring report on air, water & noise should be enclosed as per category of the mine for last 2-3 quarter. 2015 data has been enclosed.
5. The copy of original valid BG of requisite amount should be submitted in the form of annexure along with original.
6. On examination of Annexure- 16, the 'Environmental clearance letter issued by the MoEF', is invalid and expired.
