

**SCRUTINY OF DRAFT MODIFICATION IN APPROVED MINING PLAN IN RESPECT OF "TUIMU" BAUXITE MINE (46.94 HC) OF SMT.BEENA PANI AGARWAL SUBMITTED UNDER RULE- 17(3) OF MCR, 2016**

**TEXT:**

1. Cover page: Document in support of extension of lease period up to 15.3.2035 needs to be submitted.
2. The heading of document needs to be changed along with Rule under which it is being submitted as per amendment in M.C. Rules. On the cover page it is found that the present document has been submitted under Rule-17(3) of MCR, 2016, instead the review of Mining Plan should be submitted under Rule- 17(2) of MCR, 2016.
3. Jungle Jhari area has not been shown on the lease area map.
- 3A. The details of land acquired along with supporting document should be furnished in the submitted document.
4. Introduction: The first line needs to be corrected. The annexure no. of photocopy of order of Dy. Commissioner, Lohardaga needs to be corrected. (Para 3). Similarly in 4<sup>th</sup> para annexure no. 3B (as mentioned ) needs to be corrected.  
On page no. 2, it has been mentioned that "the lessee does not hold any leases in the Jharkhand State" seems to be incorrect. The same needs to be corrected.
- 5.Ch. 1.0 General: (a) Address: The PIN code no. is incorrect.  
(b) Status of applicant/lessee: The para needs to be corrected.

**6. Chapter 2.0. Location & Accessibility:**

a) Lease details: Lease period/expiry date: The para needs to be corrected as the lease was granted on 29.9.1984 & executed on 16.3.1985. The same needs to be corrected in the first line of introduction. The documentary evidence for extension of lease up to 15.3.2035 should be furnished.

Address of lessee: The PIN code no. needs to be rectified.

b) Details of lease area: Type of land: The first line needs to be corrected as the lease area consists of Raiyati land, Govt. waste land & Jungle-Jhari area.

**Existence of public road:** A lease area plan showing type of land, access road(showing direction to major location) khasra no. etc. has not been submitted.

The distance of nearest water body needs to be mentioned.

**The mining lease showing all khasra no. /survey no. on an original cadastral map/khasra map (not the photo copy) with duly certified by the State Govt. on a prescribed scale has to be submitted along with document.** The plate no. should be given clearly.

All the boundary pillars shown on the lease map should be present in the field. It should not be hypothetical. Photographs of boundary pillars 12, 21, 41, 49, 55, 60, 70, 74, 76 should be submitted along with the document.

There is difference between boundary pillar nos. between submitted lease plan (as Annexure 10) and surface plan (plate no.3). The same should be reconciled properly.

Toposheet no. with Lat./Long. Of all corner boundary pillars: -

The B.P no. given on page no. 6 does not match with surface plan( plate no. 3), it should be reconciled properly.

c) Attach a general location map: **The enclosed Key Plan (Plate no. 1) does not contain Lat/Long of the lease area.** Two topo sheet no. have been given on the Key Plan (73A/7 & A/11). Which part is A/7 & which part is A/11 should be mentioned clearly. The tree density/Forest density has not been shown on the key plan. Location of both the villages along with population should be clearly shown on the plan (Key Plan). The predominant wind direction should be shown clearly on the plan.

Ch. 3: Details of approved M.P./SOM:

Item no. 3.3: Mine development (Excavation): The total waste generation during 2014-15 should be reconciled properly with Annual return submitted by the party & accordingly it should be rectified in exploitation part.

Item no. 3.4: Compliance of Violation: The violation status has not been given properly. It should be given in a tabular form (Dt. Of issue of Violation letter, Rules pointed out, reply given by party on, date of issue of show cause notice, rules pointed out & reply given by part on etc.)

Item no. 3.5: Details of suspension: Information has not been given correctly.

**Part-A:**

**1.0 Geology & exploration:**

**a) Brief description of topography, drainage pattern etc:**

- i) Topography: The para needs to be recast properly as there is repetition of sentence. Topography of lease area should also be discussed properly with maximum & minimum RL of the lease area.
- ii) Drainage: The distance of nallas from the lease area should be furnished. The same may also be given in Chapter-II (b)
- iii) Vegetation: the first line should be corrected as the protected forest lies within buffer zone. The no. of trees along with its species(local name) existing within the lease area should be furnished properly & correctly.
- iv) Climate: The max. & min. temperature during summer and winter season along with its duration ( monthwise ) should also be furnished.

**b) Brief description of Regional Geology:**

Under this para a generalized stratigraphy of the entire region should be mentioned and not only of lease area. In the stratigraphy succession, carbonaceous shale has been shown to occur in the recent period, the same needs to be re-checked.

**c) Detail description of geology of the area:** Shape & size of the ore deposit has not been furnished as per requisite. The type of bauxite ore should be supported with its chem. Comp. The colour of bauxite as mentioned 1<sup>st</sup> para needs to be corrected. The scarp line has not been shown in Geological plan as mentioned in the 2<sup>nd</sup> para.

The dump details should also be furnished under the para.

**d) Name of prospecting/exploration agency:**

The agency who has carried out the exploration in the form of DTH should be given & not the name of lessee.

**e) Details of prospecting/exploration already carried out:**

- i) No. of pits & trenches: Repetition of sentence must be avoided. Last two lines of 1<sup>st</sup> para has been repeated.
- ii) No. of boreholes: The period of BHs given. Average depth of hole should be mentioned. Copy of Form-J submitted should be furnished along with the document.
- iii) Sampling & Analysis: What is av. of deposit?. Same may be corrected. There is difference in nomenclature of BHs between chemical analysis report & geological plan. The same may be corrected. The average grade calculated from the range does not seem to be correct. Fresh chemical analysis of bauxite for radicals viz. P2O5 & V2O5 from NABL accredited laboratory may be furnished other than conventional radicals.

All the analysis report should be of NABL accredited laboratory. The NABL accreditation certificate i.r.o. Noida testing laboratories has not been incorporated.

- iv) Expenditure: The cost of drilling (DTH) per mt. should also be spelt.

**f) Surface Plan(Plate no. 3):**

- (i) The tree on the west of office is missing.
- ii) GCPI has not been established i.e. Lat/Long of GCPI has not been furnished.
- iii) The given F.B. from GCPI to other points are not correct. It should be rectified.
- iv) The bench mark has not been established in the field.
- v) The road has not been shown properly all around the lease.
- vi) The type of land constituting the lease area should be shown in the surface plan and geological plan with distinct colour code.
- vii) The plans have not been prepared based on DGPS survey in consonance with CCOM's Circular no. 02/2010, dated 06.04.2010, 9.11. Further, the grid value should be shown on all four sides of the plan.

**g) Geological plan (Plate no. 4):** (i) Item no. (ii) to (vii) above should be taken care of.

- ii) The BP coordinates of all the bps shown in the geological plan have not been furnished. The same should be given.
- iii) The b.h. influence should be taken as 25 m. on all sides instead of 50m. as shown as because " the bauxite deposits are occurring as irregular & discontinuous bodies within laterite capping" (Ref. pg. no. 18, logal geology, 1<sup>st</sup> line).
- iv) Basis for delineating G2 zone has not been explained.
- v) The dump between DTH 8 & 9 should be properly nomenclated whether it is top soil dump or waste dumps accordingly it should be shown in index of the plan.
- vi) A magazine has been shown in the geological plan but nothing has been mentioned about its storage capacity in the text. The copy of explosive license along with blasting permission certificate should also be incorporated in the document.
- vii) The GPS co-ordinates of proposed BH should be given on the plan as well as in para (i) of the chapter.

viii) The year wise bhs to be given should be shown with different colour code.

ix) The RLs of BH given on geological plan should be re-checked.

x) The basis for keeping UPL (12 mtrs from mineralized zone) within –ve zone needs to be explained clearly.

**h) Geological section:** The Geological sections should be reconciled properly with the plan in respect of DTH no., top & bottom RL of quarry & dump. The proved & probable zone marked on the sections should be accompanied with UNFC code.

Lithology should be shown properly around –ve.b.h. The backfilled area has not been shown in section B-B'. Sections A-A', B-B', E-E', 3-3' etc. are to be reconciled properly.

Index for dump is missing.

**i) Further exploration programme:** Para g.(vii) may be referred for GPS co-ordinates of proposed BHs. Further, necessity of PBH2, 14 & 19 may be re-checked. The necessity of proposed BH does not seem to be justified with reference to Year wise Development Plan(Plate no. 5-9) and Conceptual Plan(Plate no. 12) as the area proposed for exploration remained untouched even after Conceptual period.

**j) Reserve & Resource as per UNFC:** the area of influence for proved ore zone delineation should be revised as per item no. g(iii) above. Accordingly area covered under Q1 level of exploration may be changed. Quarry influence considered in other regard should also be spelt clearly. Basis for delineating G2 level explored area needs to be clarified. The feasibility/pre feasibility study report along with financial analysis for economic viability of the deposit as specified under UNFC field guideline has not been incorporated.

**k) Detail calculation of reserve/resource:** The bulk density & recovery factor should not be taken arbitrarily. Both the value should be calculated based on field test as per guideline. On page no. 24 ( second line from top), the bulk density has been taken as 2.4 tes/cu.m. whereas in Annexure-11(details of calculation of reserve) it has been considered as 2.3. The difference should be rectified.

In Annexure-8, the RL of DTH given should be re-checked.

In Annexure-11, the influence area calculated for DTH 8, 9 & 11 needs to be corrected. Between DTH 8 & 9 there is a dump & there is no proposal for rehandling of the dump in Annexure-12 as well as in text. Further around DTH-11 the influence area has been affected due to 7.5 m. safety barrier. The same should be reconciled properly.

The Reserve & Resource figure need to be recast based on revised influence area.

**l) Mineral Reserve/Resources:** The reserve/resource based on threshold value has also to be incorporated separately. Different parameters adopted for reserve estimation like bulk density recovery factor, mining loss, ultimate pit depth proposed etc. have not been discussed in the para as required.

The table given in page no. 25 under the para, the area explored should also be included.

The resource position given in the table on page no. 25 does not match with reserve/resource estimated on page no. 26.

## 2.0 MINING:

### A. OPENCAST MINING:

#### a) Existing as well as proposed method of for excavation: Existing method of mining:

**Existing method of mining-** The para needs to be re-casted. The first line is not in conformable with Part-A, Para 1.0(c), under local geology. The date of commencement of mining operation needs to be mentioned.

**Proposed method of mining-**In first para the sentence should be in future tense. In the second para, the means of removal of OB/waste has not been spelt clearly. The recovery factor should not taken arbitrarily it should taken based on field observation and calculation should be incorporated in the document.

The name of place of stockyard and railway siding may be spelt along with distance of Railway siding from mine.

**Bench design and parameters-** The constituent of OB should be spelt clearly.

#### b) Year wise tentative excavation:

**I. Insitu Tentative Excavation-** The last column of the table needs to be correctly spelt. The ROM/Waste ratio needs to be revised as per discussion and table should be revised accordingly. The \* mark given against Ore (under ROM) may be clarified.

**II. Dump handling:**The dump no. have not been mentioned in the Surface Plan, Geological Plan, Development Plan etc. The same needs to be incorporated. The type of dump should also be incorporated in the table as well as in the relevant chapter/para of the document. The dump rehandling has not been incorporated in Annexure-12(Year wise OB removal and Production of Ore). Besides the table given, the required table as per guideline should also be incorporated.

A dump section should also be incorporated, both longitudinal and transverse, for better understanding.

The dump rehandling shown in 2018-19 under the para does not match with the development plan of the corresponding year, instead it has been shown in the development plan for the year 2019-20 & 2020-21. Further, what re-handling has been done during 2016-17 has also not been discussed in detail.

The dump rehandling part needs to be discussed in detail mentioning utilization and place of location of utilization of old dump material.

**The previous dumps were of very small dimension as shown in Surface and Geological Plan but the dimension of present proposed dump covers a much bigger area of about 1.4 Hc. The necessity of such big dump may be explained clearly since simultaneous backfilling has also been proposed from 2017-18. Further, the North grid (N2104-N2297) given for backfilling after re-handling of dump no. 2 & 3 during 2018-19 is not clear as the backfilling shall not be restricted within the limit as mentioned, which can also be envisaged from the succeeding year's development plan. The same needs to be clarified.**

**Production target of Bauxite:** Annexure-12 for OB/Waste removal and production of Ore does not contain any sectional reference, the same should be furnished for calculation along with RLs of every horizons.

**c) Individual year wise development plans/sections:**

The location of DTH should not be deleted from proposed working area like DTH-1, 6 & 8 during 2016-17. The development sections need to be nomenclated properly.

In Annexure-12 for OB/Waste removal and production of Ore, the thickness given for Soil & OB do not match with the section.

In Annexure-12, the thickness of different horizons (Soil & OB) should be reconciled properly with Year wise bench development specially for the year 2016-17, 2019-20 & 2020-21.

Under the para year wise bench development, the OB constituent needs to be rectified. The OB shall be removed from first bench as mentioned in every year need also to be corrected as OB shall be removed from second bench only.

Proposed retaining wall and garland drain as shown in the Development Plan have not been discussed with its parameter/dimension under the para "Individual Year wise Development".

The Index of development Plan/Section should be properly shown.

The development plan for the year 2020-21 does not show any proposed working. The same may be rectified.

**All the development plans should bear location of proposed boreholes. The development sections should be reconciled properly with the respective year wise development plan with respect to location of quarry, dump, top and bottom RL of proposed bench/quarry and dump, location of DTH given, proposed BH location etc.**

**d) Salient features of the proposed method of working:**

The first para needs to be recasted properly as the document has been prepared for 'A' category Fully Mechanised (A-FM) mine. There should not be any manual head loading.

In the second para, the means of removal of OB/waste has not been spelt clearly.

The recovery % and Mining loss should be derived based on field observation.

The dump re-handling part should be modified as per observation of para 2.0(b)(II) above under Mining Chapter.

**e) Layout of mine working:**

The para need to be modified according to para 2.0.A.(a) under Proposed Method of Mining as given above.

The year wise dimension of pit (l X b X h) along with dimension of benches should be given in a tabular form.

Dump should not be created without establishing non-mineralised area. In this case it is observed that dumps (Type of dump should be mentioned) have been proposed in the year 2016-17, on the Eastern & SE side of New Quarry-1 without establishing the area to be non-mineralised. The exploration has been proposed during 2016-17 & 2017-18. The same should be taken care of.

Dump should be formed in such a manner that there should be smooth movement of vehicle/machinery etc. between dump and proposed quarry.

**Road:** The width of road needs to be mentioned clearly depending on the machinery to be deployed.

**Level of mechanization:** The maximum production as mentioned 359993 MT does not match with the table of “Production target of Bauxite” on page no. 30. Accordingly the envisaged Bauxite production should be changed in all succeeding calculations.

**The bulk density of OB should also be derived on field observation as done in case of Bauxite.**

**1) Drill machine: For OB removal-**Under the para drill holedia for OB removal has been mentioned as 88-10mm whereas the same for Bauxite production has been shown as 88mm. The same needs to be rectified(Page no. 36).

**For Bauxite production-** The figure for daily production needs to be reconciled properly. The rate of drilling for both OB and Bauxite should be checked again as both may not be same. The bulk density taken should be reconciled with Annexure-12.

**Calculations have been given for OB removal and Bauxite production, what about quarry waste, no calculation for quarry waste has been appended. The same should be taken care of accordingly.**

Further, for daily production of 592 MT of OB, two (02) nos. of drill machines are proposed to be required and for 1220 MT(To be revised) of Bauxite, one(01) no. of drill machine is proposed to be required, do not seem to be justified. The calculation part needs to be revised.

**2) Excavator:** The required Bauxite production needs to be corrected. The cycle time for Bauxite excavation, Top soil & OB excavation need to re-checked as the figure given is on the lower side. As per calculation 2 nos. of excavators are required but in the table following the para 4 nos. of excavators have been furnished. The reason for same may be explained. **Further, the Boom height of excavator should also be included in the table.**

**3) Haulage and Transport equipment:**The no. of tippers to be loaded with excavators, calculation for top soil & OB removal has been incorporated, calculation for Bauxite production has not been given. The same may be incorporated.

For top soil & OB removal, the lead distance has been taken as 0.3 km. The reason for the same may be explained clearly and be shown on the relevant plan.The loading time has been taken as 3 minutes whereas cycle time for each bucket was furnished as 3 seconds in previous paras. The same needs to be explained clearly. The entire calculation needs to be explained clearly.

**4) Miscellaneous: Machinery deployed-** In the table dia of DTH should be properly spelt in conformable with previous para (Page no. 35, Drill Machine). In place of excavator it should be Hydraulic Excavator. **The use of Jackhammer has not been explained in the relevant para. The same should be given with its detail information in the table.**

**Future requirement of machinery if any should also be incorporated under the para.**

**5) Drilling & Blasting:** The thickness of OB given should be reconciled properly with previous para under Drill Machine (page no. 35).The constitution of OB needs to be modified. The line following the table for drilling equipment needs to corrected. It has been mentioned that “Burden & Spacing are maintained at 3m & 3.5 m depending upon the compactness of the formation”. What other parameters for burden & spacing are maintained may also be spelt. The last para is incomplete, the same may be corrected.

**Parameters adopted for OB removal:**The parameters adopted should be reconciled properly with that given on page no. 35-36.Depth of hole taken is incorrect.Accordingly, entire calculation should be revised.

**Parameters adopted for Bauxite production:** The bulk density taken should be reconciled with Annexure-12. Accordingly, entire calculation should be revised.

The table showing blasting parameters needs to be revised.

**6) Storage of explosive:**The copy of explosive license, DGMS permission for blasting along with blaster’s certificate need also to be incorporated along with the document.

**f) Conceptual Mine Planning:** The ultimate size of the mine working with its quarry area, backfilled area, area covered under road, area covered under green belt/afforestation/plantation etc. are to be discussed in the para in detail along with the information furnished. The necessity of proposed bore hole is not just

**Anticipated life of the mine:**The production considered should be in conformable with para 2.0.A.(b) (Page no. 30), accordingly the same should be corrected on page no. 25 also under Geology chapter. There may be change in life of the mine also. The production considered does not match with the production given in the table following the para.

**Page no. 43**, table showing information after conceptual mining period, the ultimate pit slope, reclaimed and rehabilitated (through plantation) area have not been mentioned. Further, total no. of plantation at the conceptual stage has not been supported with any information. **Ultimate pit area, reclaimed/rehabilitated area (plantation area) furnished are subject to verification through Auto Cad file.**

**Total generation of waste during the life of the mine (Page no. 43):** The information should not include soil as the table is of **Total Waste generation**. The final year (conceptual period) should be 2021-22 only.

**Reclamation & Rehabilitation:** The table on page no. 44 includes Soil in total material for backfilling (Cu.m), which is not correct. Soil is not used for backfilling. The same should be corrected at par with table on page no. 43. The area to be back filled should also be inserted in the table with approximate dimension of proposed backfilled area. The proposed back fill area during 2019-20 needs to be reconciled properly with the relevant plan. (Development Plan, Plate no. 8).

The table includes dump area during 2016-17. Justification for the same is not clear. The dump area should be given in year wise development part under para 2.0.(C) with a separate table.

The backfilling during 2021-22 should also be included separately in the table for future co-relation.

**Ultimate Pit Limit:** The ultimate pit limit i.e total area covered under excavation/pit and bench dimension at the end of 5 years plan period and at the end of conceptual period should be mentioned clearly leaving 7.5m safety barrier.

**Land degradation/Reclamation/Afforestation:** The no. of plantation at conceptual period should be included in the table of Details of Afforestation on page no. 46 as per table of Total waste generation on page no. 43.

**Land Use Pattern (Page no. 45): Existing Land use Pattern and Land use after plan period- The Jungle-Jhari area of 0.13 Hc has not been shown in any of the pattern of utilization but the total area shown as 46.94 Hc. The same may be clarified.**

The road area as shown in the existing land use pattern and land use pattern after plan period show a mismatch with submitted Geological Plan (Plate no. 4) and Development plan for the year 2020-21 (Plate no. 9). As per the above plans the road area shown in existing land use pattern should not be less than that shown after 5 years plan period.

**Year wise land use pattern may also be given under the para.**

**Land use after conceptual plan period-** The road area has not been shown in the table whereas the road is there in the Conceptual plan (Plate no. 12). The same may be reconciled properly.

**Details of afforestation (Page no. 46):** The plantation schedule for the year 201-22 should also be included in the given table separately. The proposed area available for plantation (Page no. 44, under para Reclamation & Rehabilitation) and area of proposed for plantation/afforestation (Page no. 46, under details of Afforestation) need to be reconciled. The budget allocated for afforestation programme and after care has not been furnished. The same should be furnished separately.

The statement made about location of plantation does not match with Environment Management Plan (Plate no. 11) as index for plantation is missing. The Same may be corrected. Species of plants to be planted have also to be spelt clearly. The grid line for E1100 is missing on the EMP plan (Plate no. 11).

### **3. MINE DRAINAGE:**

**c) Quantity and Quality of water:** The para needs to be recasted as there will be accumulation of water within the quarry during monsoon season which is inevitable and can not be avoided. For which arrangement of dewatering pump is required to be made and it should be included in Machinery chapter. The NABL accreditation certificate in respect of "Noida Testing Laboratory", which has carried out Ground water analysis, has not been incorporated along with the document.

**Estimation of run-off using Rational method (Page no. 49):** On what basis Rational run-off coefficient has been taken as 0.5 may be explained.

**d) Regional and local drainage pattern:** The distance of Kawanadi, Kerajharanalla, Phuljharinalla and Tuimunalla from the lease area need to be furnished in the para.

### **4.0 STACKING OF MINERAL REJECT/SUB-GRADE MATERIAL AND DISPOSAL OF WASTE:**

**a) Topsoil, Overburden & Waste-** The constituent of OB should be corrected. The total OB & waste (Cu.m) material furnished in both the tables should be reconciled properly. The nature and type of top soil available in the area need to be discussed briefly. **The required table as given in the new guideline has not been incorporated.**

**b) Waste dump-** The table furnished should be reconciled properly with observation made in para 2.0A.(f), page no. 44.

**Para (b) and (c) as envisaged in the guideline have not been incorporated.**

**5.0 USE OF MINERAL AND MINERAL REJECT:**The party to whom Bauxite is supplied should be spelt clearly including the steel plants including their required chemical and physical (size) specification. Further, this mine is not located nearTori railhead, the information furnished need to be corrected. The table furnishing average grade of deposit should be reconciled with part A.1.0(e)(iii) above. **The chapter requires to be re-casted as per guideline.**

**6.0 PROCESSING OF ROM AND MINERAL REJECT:**The grade wise stack of ore along with its location on the relevant plan need to be furnished. The correct size fraction of ore to be broken at the mine site is to be furnished along with the location of manual sizing of ore within the lease.

#### **7.0 OTHERS:**

**Site services-**Rest shelter, First aid center, potable water storage point etc. are not shown in any plan. The site services can not be maintained properly from a distance of 50 kms from the lease area.

The para requires to be re-casted. Also the second sentence is incomplete and needs to be corrected.

**Employment potential-** There is a mismatch between the statement made in the para and the table following the pararegarding number of employed miners. Further, the prescribed format should be followed for furnishing employment potential.

There will be 3 nos. of drill machines in operation at a time, the requirement of 5 driller needs to be re-checked for cost effective point of view..

#### **Chapter 8.0. PMCP:**

**8.1 Base line information:** Total lease area should be given as per cover page.

The existing land use pattern as furnished should be reconciled with observation of Chapter 2.0.A.(f). Land use pattern (Page no. 45).

**Water regime:** The distance of water bodies from lease area should be furnished.

**Water quality & Quality of air:** The sentence should be corrected as four seasons data have not been submitted instead only one month data has been submitted. Further, the NABL certificate of "Noida Testing Laboratories" need also to be submitted along with the document.

**Flora:** Within the core zone they are mostly Reserve Forest as per submitted Key Plan, the sentence may be corrected accordingly. The tree density/forest density needs to be shown on the submitted Key Plan (Plate no. 1). The species of plant that are found within the lease area should also be furnished.

**Fauna:** Domestic animal includes buffalo and dog also in the area.

**Climate:**The max. & min. temperature during summer and winter season along with its duration (monthwise) should also be furnished.[Ref. Part A.Para 1.0.(a)(iv)].The heading of the table should include information as on date.

**Human Settlement & Demographic profile-**The first line of the para needs to be corrected. The date as on the demographic profile has been submitted should be mentioned. The distance of each village need also to be given in the table. The percentage of SC, ST, OBC, GEN etc. of total population need to be given in the table. Distane and location of nearest hospital/health centre, bank, post office, school etc. also need to be given under the para.

#### **Para 8.2. Impact assessment:**

**i) Land environment (Land scape)-**Conversion of vacant area into water reservoir has not been proposed and shown in any plan. If there is any such proposal the same should be reflected in relevant para and plan.

**Land use pattern-**The land use pattern as furnished should be reconciled with observation of Chapter 2.0.A.(f). Land use pattern (Page no. 45). Accordingly the tables should be modified.

**ii& iii) Air & Water quality-** The para should be recasted in consonance with Para 8.1(Water & Air quality).

**v) Vibration level-** The means of controlled blasting should be spelt clearly.

**vi) Water regime-** The quarterly monitoring carried out as mentioned has not been supported with monitoring data.

**ix) Socio-Economic environment-**The information under the para should be specific and not in a generalized manner.

**Social & Demographic profile:** The name of residential school and its location may be furnished along with its distance from Hurmur&Tuimu village.

**Occupational health and safety-**The para should be recasted properly giving occupational health and safety measures to be taken by the lessee for mine workers and local villagers.

**Recreational facility-**The para should be recasted properly giving recreational facility to be provided by the lessee for mine workers and local villagers.

**Forest-** The sentence should be corrected as the lease area consists of Jungle-jhari.

**Agriculture-** The cultivation that are being carried out in and around the lease area should be discussed in the para.

### **8.3. PROGRESSIVE RECLAMATION PLAN:**

**8.3.1. Mined out land:**The entire para needs to be modified as per previous observations made in earlier chapters.

**8.3.2. Top soil management:** The para should be modified according to chapter 4.0, para (a) above.

**b) Waste dump:** The para should be modified according to chapter 4.0, para (b) above.

**Summary of yearwise proposal for item no. 8.3:** The no. of plantation for the year 2018-19 should be checked with "Details of Afforestation Scheme" on page no. 46. Further, the lease area consists of Govt. Waste land, the rehabilitation of waste land within the lease could have been proposed like conversion of land into water reservoir/water harvesting system keeping in mind the scarcity of water in the area.

The year wise cost figure given need to be re-checked for its better representation as there is wide variation in the cost figure from year to year.

Para no. 8.4 & 8.5 should be corrected.

**Para no. 8.4:** The reason for giving information about the lessee is not relevant and should be omitted.

**Para no. 8.5:** During temporary discontinuance period the measures to be adopted for watch and care of the plants needs to be discussed under the para.

**Para 8.6. Financial Assurance:** The figure given for storage of top soil and OB/Waste dump at Sl. No. 2 & 3 and column no. D of the table should be reconciled with Chapter 4.0, para no.(b)(Waste dump) for the year 2016-17. The road area needs also to be verified from observation made in Chapter 2.0.A.(f) under **Land Use Pattern** on page no. 45 & 65. Accordingly net area considered for calculation should be derived at followed by computation of Financial Assurance. Accordingly the Financial Assurance Plan(Plate no. 14) may be rectified.

### **Part-B.Para 9.0. CERTIFICATES/UNDERTAKINGS/CONSENTS:**

**Para 01:**The MC Rule should be properly spelt. The word "Recognized Person" should be substituted with "Qualified Person".

**Para 02:** The needs to be corrected as per guideline. No additional input should be given.

The minor mistake in sentence (Para 01) should be taken care of.

In Certificates, the term "Technically Qualified Person" should be substituted by "Qualified Person".

### **PLATES:**

**1. The Geo-referenced mining lease map prepared using DGPS shall be superimposed on Geo-referencedvectorised cadastral map shall have to be submitted in compliance to CCOM's circular no. 2/2010, dated 06.04.2010 and its addendum dated 21.09.2011& 11.06.2014. The above map will be base for preparation of all statutory plans as required under Rule-28 of MCDR,1988.**

**2. Key Plan:** The plan should be modified according to observation made in Chapter2.0.(c) above under Location & Accessibility.

**3. Authenticated lease map:**The mining lease showing all khasra no. /survey no. on an original cadastral map/khasra map (not the photo copy) with duly certified by the State Govt. on a prescribed scale has to be submitted along with document. The plate no. should be given clearly.

**4.LeaseArea Plan:**A lease area plan showing type of land, access road (showing direction to major location) khasra no. etc. has not been submitted.

**5. Surface & Geological Plan/Section:** The Plans should be modified according to observation made in Part-A, Para 1.0.(f), (g) & (h) above.

**6. Development plan/section:** The plan/section should be modified according to the observation made in Part-A, Chapter 2.0.A.(c) under “Individual Year wise Development Plan and Section” above.

**7. Environment Plan(Plate no. 10):**(i)Pre-dominant wind direction should be shown properly.

(ii) The tree density/forest density of the Forest area shown should be given.

(iii) The road should indicate the direction to major location.

(iv) The boundary pillars which are present in the field should only be shown on the plan.

**8. Environment Management Plan(Plate no. 11):** (i) The water logging in quarry has not been shown.

(ii) The year wise plantation schedule should be shown clearly on the plan with distinct colour code for each year separately and the same should be given in the index.

(iii) The E1100 grid line is missing.

(iv) The boundary pillars should be marked on the plan.

(v) The Soil monitoring station should be given over reclaimed area and Noise monitoring station should be given near quarry and haul road.

**9. Conceptual Plan(Plate no. 12):** (i) The plan should bear boundary pillar mark.

(ii) The location of DTH and proposed BH location should be marked on the plan.

(iii) Necessity of PBH do not seem to justified even after conceptual period.

(iv) Index of the plan for Reclamation and Plantation should be corrected.

(v) The water logging in quarry has not been shown.

(vi) Blocked reserve portion should be shown with suitable colour scheme/code.

**10. Conceptual Section(Plate no. 12A):** (i)The conceptual section should bear location of DTH and PBH as per plan.

(ii) The RLs should be shown properly on the section. The 7.5m safety barrier should be marked on the section. Somewhere it has been shown with dotted lines and somewhere it is shown with solid line.

(iii) Index of the section for Reclamation and Plantation should be corrected.

(iv) The water logging in quarry has not been shown on the section.

(v) Blocked reserve portion should be shown with suitable colour scheme/code on the section.

**11. Reclamation and Financial Assurance Plan(Plate no. 13 & 14):** (i)Both the plan should be corrected as per above observation from Plate no. 8-10 as well as relevant part of the text.

(ii) Blocked reserve portion should be shown with suitable colour scheme/code on both the plans.

**ANNEXURES:**

1. Copy of Financial Assurance has not been incorporated.
2. Photograph of land use of lease area has not been incorporated as per guideline.
3. All the Chemical analysis report and Environmental monitoring report should be submitted from NABL accredited laboratory.

**GENERAL:**

All the tables furnished should be numbered for ease of reference.

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