

SCRUTINY COMMENTS ON EXAMINATION OF MODIFICATION IN APPROVED MINING PLAN FOR GAURA GRAPHITE MINE OF SHRI SHISHIR KUMAR PODDAR, OVER AN EXTENT OF 4.664 HECTARES, LOCATED IN MOUZA GAURA, UNDER SATBARWA P.S OF PALAMAU DISTRICT OF JHARKHAND STATE, SUBMITTED UNDER RULE 22(6) OF MCR, 1960.

- (1) On examination of the front cover of the modification document, it is found that, the document has been submitted for the period from 2015-16 to 2019-20 but the scheme of mining approved in the last occasion is valid upto 31.03.2017 & the year 2015-16 is about to be completed, thereby the modification submitted under rule 22(6) of MCR, 1960 may be revised for the period from 2016-17 to 2020-21 instead of 2015-16 to 2019-20. Accordingly, the validity period of the modification document should be corrected at all the places in the text and also in relevant plates submitted along with the document. Again, it is found that, the name of the village(s) in which the lease hold area is located is missing, which should also be indicated in the front cover.
- (2) In the front cover, the validity of lease period is indicated to be upto 11.09.2052, which should be checked & corrected.
- (3) The DGPS surveyed map/plan in compliance to CCOMs circular No.2/2010; regarding geo-reference cadastral map has not been submitted. Moreover, the undertaking submitted in compliance to the CCOM's circular No. 2/2010 is not acceptable at its present form.
- (4) The copy of the approval letter of mining plan, dated 24.07.1996 has been enclosed as annexure-3 but the copies of approval letters of the mining plan/scheme of mining/final mine closure plan approved in different occasions as on date has not been enclosed, which should be submitted for ease in monitoring.
- (5) The copies of violation letter/show cause notice/compliance status thereof for the years 2013 to 2015 has been enclosed as annexure-5, instead the status for the same for the last five years should be enclosed & the annexure may be revised accordingly.
- (6) The photocopy of the borehole logs are enclosed as annexure-6 but it is not known when such holes are drilled, which should be furnished and the report may be revised accordingly.
- (7) The measured mineral resources have been computed & enclosed as annexure-8 but the information / data pertaining to depths of occurrence for such resources is missing and the same should be furnished.
- (8) The excavation planning for the five year period has been furnished against 1st year, 2nd year etc.in annexure-9; instead financial years should be given. Besides, the length, width of benches proposed in topsoil, overburden & graphite ore zone has not been furnished. Moreover, the name of the quarry(s)/ location co-ordinates considered for the purpose is missing, which should also be furnished by adding more columns in the tabular annexure. It is also found that, the recovery of graphite ore is considered as 80% but the basis on which such recovery is considered should be justified with valid reasons. So, also the grade of the recoverable graphite may be furnished supported by authenticated chemical analysis report. Likewise, the waste generation is indicated to be 20% but the basis for such generation has been considered also not mentioned, which should be furnished indicating the grade of such waste material. Accordingly, necessary corrections / modifications may also be made in connected paras in the text & in relevant plates.
- (9) The CTO enclosed as annexure-11 has already expired on 31.12.2015, thereby a copy of the valid consent to operate the mine from Jharkhand State Pollution Control Board has not been enclosed, which should be submitted.
- (10) Few photographs of the existing quarries, dump & plantation has been enclosed as annexure-12 but no photographs for existing exploration & boundary pillars has not been enclosed, which should be submitted.
- 11) The ambient air & noise level analysis report has been enclosed as annexure-13 but the same for flue gas, effluent & soil monitoring reports has not been enclosed, which should be submitted for ease in monitoring.

- (12) A copy of valid MoEF clearance report for the aforesaid mine has not been enclosed, which should be submitted.
- (13) A copy of the explosive procurement license and a copy of the blasters license as required for carrying out blasting operation in the mine have not been enclosed along with the document, which should be submitted.
- (14) The chemical analysis report in support of quality of water has been enclosed as annexure-16 but the report is old one, analysed on 17.10.2012, instead a fresh report for the same should be submitted.
- (15) In case of individual or partner, a declaration/affidavit should be submitted to know whether he is working in other firms/company/organization etc.
- (16) A mention has been made that, the modification in the approved mining was approved on 20.03.2013 but the reason for such modification has not been given as per the heading of the para. Besides, the period of validity of such modification document may also be indicated and the para may be revised accordingly. (Para 3.2)
- (17) The proposed & actual achievement status of exploration done during the years 2012-13 to 2014-15 has been furnished, instead the same for the period from 2012-13 to 2015-16 should be furnished indicating the reasons for higher/lower side deviation if any for clarity. [Para 3.3(i)]
- (18) Under the heading **Excavation**, the proposal as per the approved scheme of mining on account of overburden, inter burden, graphite & quarry waste generation for the period from 2012-13 to 2016-17 has been furnished but the review of excavation on account of on account of overburden, inter burden, graphite & quarry waste generation achievement status for the period from 2012-13 to 2015-16 should be furnished in tabular form indicating the reasons for deviation if any. Besides, the name of the quarry(s)/location co-ordinates/cross sections considered for the purpose in each year of the last modification period may also be furnished. [Para 3.3(ii)]
- (19) Under the heading **Reclamation**, the proposed & achievement status of reclamation & dumping during each year of the last approved scheme of mining period (2012-13 to 2016-17) has not been clearly indicated, which should be furnished. All should be presented in tabular form & rest of the things may be revised accordingly. [Para 3.3(iii)]
- (20) Under the heading **Afforestation programme**, the proposal as per the approved scheme of mining on account of proposed plantation schedule for the period from 2012-13 to 2016-17 has been furnished but the actual achievement status on account of afforestation for the period from for the period from 2012-13 to 2015-16 has not been furnished in tabular form indicating the reasons for deviation if any. Moreover, the location co-ordinates of such plantation may also be furnished. [Para 3.3(iv)]
- (21) The summary of violations pointed out and manner of compliance thereof during the last five year in the mine should be given in tabular form and the para may be revised. (Para 3.4)
- (22) The valid reasons for submission of modification in the approved mining plan under Rule 22(6) of MCR, 1960 should be furnished instead of mentioning N/A. (Para 3.6)
- (23) There are six trenches & 12 nos. of trial pits are stated to have been made but the dimension of such trenches & trail pits are missing, which should be furnished. Besides, the financial year(s) in which such trenches & the trial pits are made also be furnished. All should be presented in tabular form and the par may be revised. [Para 1.0(e)(i)]
- (24) Under the heading **Samples analysis**, there is a mention that, the channel & grab samples are collected from Quarry-1 but the manner in which the samples are collected and analysed has not been clearly indicated, which should be discussed and the para may be revised. [Para 1.0(e)(iii)]
- (25) Under the heading **Existing Method of Mining**, the mining operations are stated to have been commenced during 2002, instead the actual date of commencement of the mining operations should be furnished. It is also found that, the mining operations are undertaken by other than fully mechanised means by introducing crowbars, picks, spades and sledgehammers, which are not correct, thereby, the actual method of mining practised should be discussed as per the heading of the para. In addition to the above, the location co-ordinates of the existing quarries & dumps may also be furnished and the para may be revised suitably. [Para 2.0(A)(a)]

(26) The Proposed Method of Mining furnished in the para under reference may be revised by furnishing the proposed bench formation status both in overburden & in ore zone, dumping, reclamation & rehabilitation etc. for clarity. If the existing quarry(s) is/are proposed to be developed /extended, the same may also be furnished. If the proposed workings are in the virgin area, the reasons for the same may also be furnished with valid reasons. In the light of the above, the para may be revised. (Page No. 24 & 25)

(27)(i) Under the heading **Insitu Tentative Excavation**, the proposed generation status of soil, OB/SB/IB, mineral rejects/waste and production target for next five years have been furnished in tabular form but the location co-ordinates considered for excavation planning is missing in the table, which should be furnished by adding more columns. (ii) The recovery percentage of the graphite also not mentioned missing, which should be indicated. In the light of the above, the data furnished in the tabular form should be revised. Accordingly, corresponding incorporations /modifications may also be made in connected paras in the text & relevant plates. [Para 2.0(B)(I)]

(28) The name of the quarry(s)/location co-ordinates of the proposed workings should be furnished indicating the direction of advancement of quarry faces. Besides, the tentative dimension of the benches proposed to be made in topsoil, overburden & graphite ore zone may also be specified. All should be presented in tabular form. In the light of the above, the information furnished in para 2.0(e) may also be revised. [Para 2.0(d)]

(29) In 1st para of the page under reference, it is found that, the height & width of the benches are proposed for 6m each, since formation of the deposit is not so hard, the height & width of the benches should be restricted maximum upto 3m and accordingly necessary corrections/modifications/ incorporations may also be made in connected paras in the text and in relevant plates. (Page No. 29)

(30) The recovery percentage for the period from 2008-09 to 2012-13 has been furnished in tabular form but on verification of the table it is found that, the figures furnished on account of achieved production & rejects generation is appears to be not correct, which should be checked and correct figures should be furnished.(Page No.29)

(31) The para is meant for conceptual mine planning, whereas, no information regarding the same has been furnished. Therefore, the excavation planning beyond the proposed modification period should be furnished on account of development, production, dumping, reclamation, rehabilitation & afforestation up to the end of the lease period. Besides, it is also found that, the occurrence of graphite is found below the lairs of topsoil & overburden but the same has not been discussed in the refer para. Therefore, the factual information about the topsoil & overburden is required to be furnished indicating, the quantities of topsoil and overburden proposed to be generated by end of the conceptual period supported by calculations for ease in monitoring. [Para 2.0(f)]

(32) In 2nd row, 2nd column of the 2nd table, the ultimate pit depth has been considered as 30m but no exploration has been done upto that depth, thereby the ultimate depth of the quarry should be revised based on the existing exploration and the para may be revised accordingly. (Page No. 37)

(33) Under the heading **Reclamation and rehabilitation**, the dumping for each year of the ensuing modification period has been furnished in tabular form but location co-ordinates of such dump(s) is missing, which should be furnished. Besides, no rehabilitation measures for the proposed dump by way of plantation has also not been given, which should be furnished and the para may be revised accordingly. (Page No. 38)

(34) The land use after the plan period has been furnished in 3rd table given in the page under reference, instead the same by end of each year of the ensuing five year period is required to be given in separate tables and the para may be revised accordingly. (Page No.38)

(35) The proposed plantation schedule for each year of the ensuing modification period has been furnished in tabular form and the plantation has been proposed along the boundary of the lease area, instead the same should be proposed in the backfilled area if possible and location co-ordinates of such plantation may also be furnished by adding more columns in the table. (Page No. 41)

- (36) The minimum & maximum depth of water table in the **plateau area** has been furnished but the lease is not located in any plateau, thereby the **plateau area** should be corrected as lease area and the para may be revised accordingly. [Para 3.0(a)]
- (37) The quality of water encountered in the area is required to be furnished and the para may be revised accordingly. [Para 3.0(b)]
- (38) The quantities of OB/SB/IB proposed to be generated in each year of the ensuing five year period has been furnished in the table given in the para under reference but the location co-ordinates /cross sections considered for the purpose is missing, which should be furnished by adding more columns in the table. [Para 4.0(a)]
- (39) Construction of parapet wall, terracing & plantation for the dump has been proposed but the dimension of such parapet wall & number of terraces as well as height of each terrace of the dump has not been given, which should be furnished. Besides, number of saplings proposed to be planted in each year of the ensuing modification period may also be furnished. All should be presented in tabular form. In the light of the above, the para may be revised. [Para 4.0(b)]
- (40) The quantities of OB/waste proposed to be generated in each year of the ensuing five year period has been furnished in the table given in the para under reference but the location co-ordinates/cross sections considered for the purpose is missing, which should be furnished by adding one more column right to the table. [Para 4.0(c)]
- (41) The graphite ore contains (-) 10% fixed carbon, which is not as per the chemical analysis report enclosed as annexure-7. Besides, the enclosed valid chemical analysis report in support is old one analysed during the year 2012, which is not acceptable. Moreover the cut-off grade of graphite also not indicated. (Para 5.0)
- (42) Under the heading **Employment Potential**, a full time Mining Engineer holding degree in mining engineering as required under Rule 42 of MCDR, 1988 and a 1st class mine manager as required under MMR, 1961 has not been proposed under employment, which should be done and the para may be revised accordingly. (Page No. 49)
- (43) Under the heading **Recreation Facility**, the facilities available to the local people of the surrounding area should be furnished in detail & the para may be revised accordingly. (Page No. 60)
- (44) Quarry wise extent of area proposed to be degraded in each year of the ensuing five year period should be furnished. Besides, quarry wise reclamation, rehabilitation, restoration & afforestation etc. for each year may also be furnished. All should be furnished in tabular form and rest of the things should be erased. (Para 8.3.1)
- (45) Dimension (L x B x D) of the void available for backfilling has not been furnished in 3rd row of the table given in the page under reference and the name of the quarries linked in the void formation is also not given, which should be furnished. Accordingly, the information furnished for the period from 2016-17 to 2019-20 in page No. 65 to 68 may also be revised. (Para 8.3.5 of page No. 64)
- (46) Plate No.1 (Key Plan): The details of the deficiencies found on the plate are as follows: (i) The index reference given for road is suspected to be for public road but to which important places both end of the road leads to has not been mentioned, which should be indicated. Besides, the index reference given for the same is also not matching with that of the plan. (ii) Direction of flow of nala is missing on the plan portion of the plate. (iii) The index reference given for forest land with density is not matching with that of the plan portion of the plate. (iv) The index reference given for village with population is not to be seen on the plan. (v) Besides, 25cm long scale also not marked on the plate.
- (47) Plate No. 3 (Surface Plan): (i) The land classification given in front cover of the document on account of private land & Govt. waste land have not been marked with different colour codes, which should be done. (ii) The index reference given for approach road is not matching with that of the plan. (iii) There are three Permanent ground control points) have been selected from boundary pillar BP-10 to BP-1, BP-2 & BP-3 respectively, which is not acceptable, instead atleast three permanent ground control points situated outside the lease area should be selected and latitude & longitude of these ground control points may also be furnished. Besides, these ground control stations need to be linked with the boundary pillars. (iii) Moreover, Surveyors signature is missing on the plate, which should be signed by a competent surveyor. In the light of the above, all other relevant plates may also be revised.

GEOLOGY PART

Part-A:

1.0 Geology and exploration:

1) In the text part, it is stated that a total of four boreholes are drilled during the year 2012 and two boreholes during the year 2015. Among four boreholes, borehole no.2 is negative and two boreholes drilled during 2015 are also negative. All should be presented in the tabular form and the para may be revised accordingly [para: 1 (e) (ii), Page no. 17].

2) The photocopy of borehole logs are enclosed as annexure -6, wherein it is observed that the bore hole logs has been enclosed only for four boreholes drilled during the year 2012. The borehole logs for remaining two boreholes drilled during the year 2015 has not been enclosed along with the document which may be enclosed [Annexure -6].

3) Item no. 1(j): The mineable proved reserves have been estimated and presented in the tabular form at page no 21, does not represent actual reserve position of the deposit. Hence, the proved reserves may be derived after depleting the recovery percentage and percentage of mining loss from the estimated resources, for which separate column may be inserted in the respective table. On the basis of outcome of the reserve of the deposit, the anticipated mine life may be calculated accordingly and the same reserve figure may also be presented in the table at page no. 21.

4) Key plan (plate no. i): The index reference for village road from village Bhelwatanr to the mine is not clear which may be shown on the map [1 (b), page no. 4].

ii) Vegetation: In the text part it is stated that there are two parts of forests, one is Pol Pol PF and another one is betla RF within buffer zone. It is observed that betla RF has not been shown on the map which should be shown if comes within buffer zone [para 1 (a), page no. 12].

5) Geological plan (plate no.4): i) The dip and strike direction of the country rocks and exposed graphite veins have not been given in the surface plan (plate no. 3) and Surface Geological Plan (plate no. 4), which may be given.

ii) Index for retaining wall has also not been given on the map.

6) Geological section (plate no. 4A):

i) In section 1-1' boreholes no 4 has not been shown.

ii) In section 3-3' Retaining wall outside the 7.5m safety barrier, borehole no. 1 & 3 and pit no. 5 have not been shown.

iii) In section 4-4' borehole no. 2 has not been shown.

iv) In section 5-5' borehole no. 2 and RL at the end of the dump has not been shown.

v) In section 6-6' plantation area shown on the plan whereas the same has not been shown on the section.

All the pages of annexures enclosed with the document should be attested by the person preparing the mining plan.
