

**GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(IMPACT ASSESSMENT DIVISION)
NON-COAL MINING SECTOR**

SUMMARY RECORD OF 6th MEETING OF THE COMMITTEE OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENTAL APPRAISAL OF NON-COAL MINING PROJECTS CONSTITUTED UNDER THE EIA NOTIFICATION, 2006.

The 6th meeting of the Expert Appraisal Committee for Environmental Appraisal of Mining Projects (Non-Coal) of the Ministry of Environment, Forest and Climate Change was held during **June 27-28, 2019**. The list of participants is annexed herewith. After welcoming the Committee Members, discussion on each of the Agenda Items was taken up ad-seriatim.

(1.1) Deliberation & Circulation on the Minutes of the 5th EAC Meeting held during May 29-30, 2019:

The Minutes of the 5th Meeting of EAC held during **May 29-30, 2019**, were circulated to the members of the Committee. The Committee made brief deliberations on the proposals placed in the last meeting and confirm the same.

DAY 1: June 27, 2019 (Thursday)

2.1. Mining of beach sand minerals of 750000 TPA by M/s. Indian Rare Earths Limited in the mine lease area of 180 ha located at Alappad, Panmana and Ayanivelikulangara villages in Karunagapally Taluk, Kollam, Kerala (New File No: J-11015/227/2015-IA-II (M); New Proposal No: IA/KL/MIN/25461/2014; Old File No: 11-36/2008-IA-III; Old proposal No: IA/KL/MIN/85725/2008; Consultant: CSIR-NIIST)- Consideration of EC.

The environmental clearance (EC) proposal of M/s Indian Rare Earth Limited (IREL) for mining of beach sand minerals with enhancement in production capacity from 2, 37,150 TPA to 7, 50,000 TPA in NK Block IV EE Ilmenite mine with the total mine lease area of 180 ha. The mine lease area is located at village(s)-Alappad, Panmana and Ayanivelikulangara, Tehsil-Karunagapally, District-Kollam, Kerala. The latitudes and longitudes of the mine lease area lies between 09°00'55.97" to 09°02'3.80" N, 76° 31'17.19" to 76° 30'29.90"E.

Project proponent (PP) submitted that the TOR was considered in the EAC meeting held during 24-26 June 2015 and the TOR was granted by Ministry vide letter No. J-11015/227/2015/IA-II dated 11.08.2015 for undertaking detailed EIA study and it was valid up to 10.08.2018. Followed by a proposal for extension of TOR validity was considered in the EAC meeting held during 22-23 January 2019 and the TOR validity was extended for a period of one year from 11.08.2018 to 10.08.2019 vide letter no. J-11015/227/2015/IA-II dated 12.02.2019. The PP submitted the EIA/EMP Report to Ministry for seeking environmental clearance and the proposal has been considered in this EAC meeting.

PP submitted that the Ministry has accorded environmental clearance and CRZ clearance to M/s IREL vide letter no. 11- 36/2008 IA- III dated 01.03.2011 for beach sand minerals with production capacity of 2,37,150 TPA. PP further submitted that the Govt. of Kerala, vide letter no. G.O (Rt.) No. 746/07/ID, dated 08/06/07 has granted lease to M/s IREL for the period of 20 years and the lease has been executed on 07.06.2011 for the term of 20 years. The modified mining plan with progressive mine closure plan in respect of NK Block IV EE Ilmenite Mine over an extent of 180 ha was approved by Department of Atomic Energy, Atomic Minerals Directorate for Exploration and Research, Government of India, Hyderabad vide letter no. AMD/MRG/IREL-Chavara/MMP/180 Ha dated 15 November 2018. The Modified Mining Plan and Progressive Mine Closure Plan is approved in respect of minerals such as Ilmenite, Rutile, Zircon, Monazite, Lexuoxene and Silimanite, respectively.

PP submitted that the total mine lease area of project is 180 ha which comprises of CRZ IA, CRZ IB, CRZ III and CRZ IV areas. PP also submitted the recommendation from Kerala Coastal Zone Management Authority (KCZMA) vide letter no: 2933/A1/2018/KCZMA dated 22.10.2018. The KCZMA letter mentioned that the "KCZMA in its 96th meeting vide agenda no.96.03.14 discussed the matter in detail and decided to recommend the proposal of M/s Indian Rare Earth Limited to Ministry of Environment, Forest and Climate Change for considering the CRZ clearance for mining of heavy mineral sand subject to the condition that no mechanical mining will be allowed in CRZ IB. In the circumstance, the above proposal of Indian Rare Earth Limited, Chavara, Kollam is forwarded for your consideration subject to the condition that no mechanical mining will be allowed in CRZ IB."

PP submitted the past production details from Director of Mining and Geology, Government of Kerala vide letter no. nil dated 20.06.2019 which revealed that the PP has mined out within the EC capacity. Furthermore, PP submitted the affidavit dated 19.06.2019 in compliance of Ministry's OM dated 30.05.2018 in respect of the order of Hon'ble of Supreme Court dated 02.8.2017 in W.P.(C) No. 114/2014. PP submitted the compliance report of EC dated 01.03.2011 from MoEF&CC RO,

Bangalore vide letter no. EP/12.1/2010-11/26/Kerala dated niland the Committee discussed the same.

PP submitted that the public hearing was conducted on 22.05.2018 at F.K.M. Auditorium, Chavara under the Chairmanship of Shri. K. R. Manikandan, ADM, Kollam. PP presented the concerns raised during public hearing and their corresponding mitigation measures. PP further submitted that the mining method is open cast method of inland mining by using dredge or excavators except in CRZ IB. Inland mining will be done by using dredge. The dredge has a working length of 30 meters and width of 14m. The separation is through physical process and no chemicals are used. The semi mechanized mining includes refilling of mined area using tailings from pre concentration plant and mineral separation plant. PP further submitted that the TS canal passes in between the proposed mining block. The deposit covers an area of 180 hectares with Neendakara at the south and Kayamkulam in the north.

PP submitted that the total cost of project is 09 Crores. The funds allocated for environment management (capital) is 0.46 crores, for CER 0.09 Crores and for environment management plan (recurring per annum) is 1.13 Crores, respectively. PP further submitted that no litigation is pending against this proposal.

Based on the presentation made by PP and the discussion held, the Committee observed the following and **returned the proposal in present form.**

- (i). PP submitted the resettlement and rehabilitation plans which are generic and not adequate. PP needs to submit the revised R & R plan with budget plans for year wise accession of lease and displacement (i.e. number of people, houses, cattle and cultivation land etc.) involved.
- (ii). PP presented the water quality data, however, the details of radioactive elements present in the water are not provided. PP needs to submit the water quality data for potential presence of radioactive elements and minerals present in the water.
- (iii). The specific condition (iii) of EC dated 01.03.2011 mentioned that the "50 mts all along the canal shall be maintained as buffer and shall not disturb at all maintained". The compliance report mentioned that the **"PP is carrying out mining very close to the canal and not maintain 50 m buffer as per EC. However, PP informed that Inland Waterways Authority of India has conveyed No Objection to dredge at the canal. PP should get the condition amended"**. The Committee mentioned that there is a non-compliance reported by RO MoEF&CC and the PP has put their contrary view highlighting the ambiguity in understanding of dredging and mining. Accordingly, the Committee advised the Ministry to verify the factual situation and take appropriate action accordingly.

- (iv). PP submitted the air quality data for PM10, SOx and NOx but not provided the PM2.5 values. PP needs to redo the air quality modeling and submit the revised data.
- (v). In Public hearing issues, it is mentioned that salt intrusion in Vellanathuruthu as a result of mining has adversely affected farming and also caused drinking water scarcity. PP submitted that detailed hydrogeology survey has been conducted; however, the analysis results are generic and not adequate. Furthermore, the PP not submitted the details of laboratory conducted the hydrogeological study and their valid accreditation certificate. PP needs to submit the revised final hydrogeological study report and the valid accreditation certificate for the laboratory.
- (vi). **PP informed to the Committee that the company name has been changed from Indian Rare Earth Limited to IREL (India) Limited on 15.03.2019, but, there is no change in ownership of the company. Accordingly, the Committee suggested that the PP may submit fresh application for grant of EC in the name of IREL (India) Limited. The Committee also advised the Ministry to examine the case appropriately in respect of required documents for amendment in existing EC.**
- (vii). PP submitted that the land required for mining activity is not completely acquired by IREL. PP needs to submit the status of the land acquired and time needed to acquire remaining land.
- (viii). PP submitted that the construction of seawalls on regular basis by the State Irrigation Department/IREL is already in practice. PP needs to submit the details of constructions made and their type with budgetary provision allocated.
- (ix). PP needs to comply to all conditions stipulated by Kerala Coastal Management Authority vide their letter No.2933/A1/2018/KCZMA dated 22.10.2018
- (x). A comprehensive EMP study shall be conducted for migratory birds, if any, present in the mine lease area.
- (xi). PP requires to submit the detailed marine and estuarine environment studies and coastal erosion in buffer zone of the study and suggested mitigation measures therein.
- (xii). PP needs to submit land breakage details of the total mine lease area.
- (xiii). PP need to monitor the ground water quality and submit the results of the same.
- (xiv). PP submitted inadequate information on the Form 2 of the Parivesh Portal.
- (xv). PP should submit the past production details as per the annexure-III of agenda of this EAC meeting.

2.2. Bhadra Iron Ore Mine with increase in iron ore production from 1.25 to 1.5 MTPA by M/s. JSW Steel Limited in the mine lease area of 130.53 ha located at Donimalai Reserved Forest, Ittanahalli Village, SandurMandal, Ballari District, Karnataka. (File No: J-11015/16/2007-IA.II(M); Proposal No: IA/KA/MIN/7548/2008; New Proposal No: IA/KA/MIN/70546/2017; Consultant:B. S. Envi. Tech Pvt. Ltd.)- Consideration of EC.

The proposal of M/s JSW Steel Limited for Bhadra Iron Ore Mine (ML No. 2365) with enhancement in the iron ore production from 1.25 MTPA to 1.5 MTPA in the mine lease area of 130.53 ha. The mine lease area is located at Donimalai Reserved Forest, Ittanahalli Village, Sandur Mandal, Ballari District, Karnataka. The mine site comprises two blocks (Block – I & Block - II). The mine lease area bound between the latitude of 15° 06' 41.26" N –15°06'43.63"N and the longitude of 76°37'25.38"E-76°37'26.66"E with an altitude ranging from 580 to 938 m above MSL. The Survey of India Toposheet number of the mining lease area is 57/A/12.

PP submitted that the Ministry has accorded EC to M/s. Tungabhadra Minerals Limited vide letter no. J-11015/16/2007-IA-II (M) dated 13.05.2008 for iron ore mining with the production from 0.50 MTPA to 1.25 MTPA in the mine lease area of 250.58 ha. PP submitted that with reference to e-auction dated 04.10.2016, the Department of Mines and Geology, Government of Karnataka granted letter of intent (LOI) to M/s. JSW Steel Limited vide letter no. DMG/MLS/CCA/12/2365/2016-17 dated 26.10.2016 over an area of 130.53 ha for a period of 50 years. PP further submitted that the EC has been transferred from M/s. Tungabhadra Minerals Limited to M/s. JSW Steel Limited by the Ministry vide letter no. J-11015/16/2007-IA-II (M) dated 23.10.2017 for iron ore mining project with 1.25 MTPA production capacity in the mine lease area of 130.53 ha. PP further submitted that the mine lease deed has been made on 27.05.2019 for 130.53 ha for a period of 50 years. PP further submitted that the Ministry has granted the TOR for enhancement in the iron ore production from 1.25 MTPA to 1.5 MTPA vide letter no. J-11015/16/2007-IA-II (M) dated 11.01.2018. PP submitted the EIA/EMP Report to Ministry for seeking environmental clearance.

PP submitted that total mine lease area is forest land and the Stage-I Forest Clearance has granted by the Ministry vide letter no. 8-12/2018-FC dated 22.06.2018. Followed by the Ministry has accorded Stage-II Forest Clearanceto JSW Steel Limited vide letter no. 8-12/2018-FC dated 15.05.2019 for diversion of 133.58 ha of forest land (Comprising of 130.53 ha for iron ore mining in erstwhile ML No. 2365 of M.s. Tungabhadra Mineral Private Limited and 3.05 ha for approach road).

PP submitted the authenticated past production details from Office of the Director, Department of Mines and Geology, Government of Karnataka vide letter No.

DMG/MLS/AUC/'C'-2365/2016-17/11208 dated 16.03.2017 wherein the production details have been provided till 2009-10 and the production has not exceeded as per EC. PP further communicated to the Regional Office of the Ministry vide letter no. TMPL/EC/ML2365/2011-12/216 dated 3rd October 2011 stating that mining operations are suspended since 08.6.2009 along with their compliance report of 2009. Based on this, the RO MoEF&CC vide letter No. EP/12.1/673/KAR 2222 dated 16 March 2017 stated that the site visit of this project was not taken since it is learnt that this project is not in operation, thus, the RO MoEF&CC was requested the Regional Officer, Karnataka State Pollution Control Board (KSPCB) to provide the present status of the project. RO MoEF&CC letter further mentioned that the Regional Officer, KSPCB has communicated that as per their records M/s. Tungabhadra Minerals Limited mine with ML NI. 2365 is not working due to ban imposed by the Hon'ble Supreme Court of India. KSPCB also stated that Mines authority has submitted the copy of monthly returns to IBM on 02.05.2013 stating that their mine is not working and carrying out only e-dispatches by the monitoring committee through MSTC. Thus, the PP submitted that the mining operations are yet to be commenced by JSW Steel Limited. Furthermore, PP submitted the affidavit dated 26.06.2019 in compliance of Ministry's OM dated 30.05.2018 in respect of the order of Hon'ble of Supreme Court dated 02.8.2017 in W.P.(C) No. 114/2014.

Based on the presentation made by PP and the discussion held, the **Committee deferred the proposals and asked the PP to submit following requisite information for further consideration.**

- (i). PP needs to carry out the 3D modeling for PM2.5 and PM10 taking it as point at top of mine and assess impacts on nearby village, habitation, vegetation and agriculture land.
- (ii). PP needs to submit the provisions of control of dust at the source be made to prevent the impacts on environment.
- (iii). PP requires to carry out direction particle size analysis for upwind and downwind direction of dust.
- (iv). PP requires to submit the socio-economic survey for affected people (quantity needs to be specified) and measures for protection with timeline and budgetary provisions.
- (v). PP submitted that the total cost of project is 43.39 Crores, however, in Form 2, it is mentioned that 110 Crores. The Committee asked the PP for confirmation and PP confirmed that the total cost of the project is 110 Crores. Accordingly, the PP has to revise the CER, Wildlife conservation and EMP budget.
- (vi). PP needs to submit the approved revised wildlife conservation plans (details of species and their protection plans).

- (vii). PP needs to submit the revised year wise budgetary provision for monitoring and pollution measurement of the mining activities.
- (viii). PP requires to submit the details of ore transport mode and the issues arises due to transportation and the mitigation plans planned for protecting the environment.
- (ix). PP submitted that the ore will be dispatched to JSW steel plant by tippers/dumpers. PP needs to submit the locations of the plant as well as distance between the plant and mine. Also submit the details of mitigation measures to be implemented for minimizing the environmental impact.
- (x). PP needs to submit the capacity of crushers and flow chart for crusher and screening unit and also their working time and impact on the environment.
- (xi). PP needs to submit the details of total excavation including total waste generation.
- (xii). PP submitted the action plans for public hearing issues which are generic and PP needs to submit the revised detailed actions plans with revised budgetary provisions for the public hearing issues.
- (xiii). PP has mentioned in the EIA report that the waste dump areas decreasing over period of time. It is not clear that whether the dumping is also being used or not. Accordingly, PP needs to submit the necessary clarifications for the same.
- (xiv). PP submitted that the written suggestions/objections/queries raised during public hearing are in local language. PP needs to submit the authenticated translated copy in English for the same.

2.3: Mining of 4.0 LTPA of Malkapuram Dolomite (Minor Mineral) from mining lease area 73.113 Ha, located at Kochervu and Malkapuram Villages, Dhone Mandal, Kurnool District, Andhra Pradesh by M/s Sri Balaji Works [Agenda No 2.3; Proposal No. IA/AP/MIN/9059/2012; Consultant- B.S. Envi Tech Pvt Ltd] - EC Regarding.

The proposal of M/s Sri Balaji Works is for the production of 4.0 lakh Tonnes of Dolomite from Malkapuram Dolomite Mine (ML area 73.113 Ha) located at Kochervu and Malkapuram Villages, Dhone Mandal, Kurnool District, Andhra Pradesh. The mine site is located between 15°20'39.20" to 15°21'02.60"N latitude, & 77°54'37.60" to 77°55'41.50"E longitude. The Mining Lease Area is a part of the Survey of India Topo-sheet No. 57/E/15 & 57 I/3.

The project at the time of application to Ministry was under Schedule 1(a) of mining, Category- "A" project as per EIA notification 14th September 2006 (amended time to time) as the mining lease area is more than 50 Ha. In pursuant to S.O. 3977(E) dated 14.08.2018, the proposal is now, Category 'B' as mining lease area is less than 100 Ha. As the proposal was under appraisal by the EAC, in compliance to provision of Ministry O.M. No. J-11013/41/2006-IA. II(M) dated 23.10.2017, the proposal is being processed by EAC.

The PP vide proposal No IA/AP/MIN/9059/2012 applied online for grant of ToR on 11.12.2012 submitted Form-1 and Pre-Feasibility Report. The proposal was considered in EAC meeting held on 13-15th March 2013, wherein, the Committee recommended for grant of ToR. The ToR was issued vide Lr. No. J-11015/460/2012. IA. II (M) dated 30.04.2013. On ground of delay in Public hearing, the PP was granted extension in validity of ToR vide Lr. No. J-11015/460/2012. IA. II (M) dated 13.04.2016, which was valid up to 30.04.2017.

The PP vide proposal No. **IA/AP/MIN/9059/2012** applied online for grant of EC on 07.04.2017, i.e. before the expiry of ToR and submitted EIA/EMP Report after conducting public hearing. The proposal was considered in EAC meeting held on **May 29-30, 2017**, wherein the Committee deferred the proposal as the PP did not attend the meeting. The proposal was then considered in EAC meeting held on **28th June 2017**, wherein the Committee deferred the proposal for want of requisite information. The PP submitted the desired information vide LR No SBW/MOEF&CC/2017 dated 06.12.2017. As the documents submitted by PP were not complete in all respect the requisite information was sought from PP on 11.01.2018. The PP vide Lr. No SBW/MOEF&CC/2018 dated 19.02.2018 submitted the information and proposal was then re-considered in EAC meeting held on **March 22-23, 2018**, wherein the Committee deferred the proposal for want of requisite information. The Ministry vide Lr No J-11015/460/2012-IA. II(M) dated 18.04.2018 requested PP to submit the requisite information. The PP vide LR No SBW/MOEF&CC/2018 dated 30/06/2018 submitted the information and the proposal was considered in EAC meeting held on **19-20 July 2018**. During the meeting PP vide LR No. No SBW/MOEF&CC/2018 dated 20.07.2018 submitted the map showing no mining area, revised budget for EMP, Occupational Health, & CER, and undertaking from PP and consultant. The Committee in its meeting held on 19-20 July 2018 deferred the proposal as the PP submitted some changes in the modified mining plan and such changes was not brought to the notice of the Committee, neither any justification for given. PP submitted the clarification vide letter dated 26.10.2018 regarding modification in mining plan and proposal was then considered in EAC meeting held on **November 15-16, 2018**, wherein Committee deferred the proposal because PP has come to the meeting without accredited consultant. The proposal was thereafter de-listed as PP did not submit the information on time. The PP submitted the requisite information on 04.03.2019 and the proposal is placed in EAC meeting held on **June 27-28, 2019**. The Committee also deliberated on the following information so far submitted by PP.

The PP submitted the letter of intent issued by industries and commerce vide letter No. 12361/M.I (1)/2009 dated 18.06.2012 wherein it was recommended to grant mining lease for Dolomite over an extent of 73.113 Ha for 20 Years. In the same letter, time period of 6 months was given for submission of EC, Mining Plan and Consent to Operate from the date of issuance of this LOI. The EAC in its Meeting held on 22-23 March 2018 requested PP to obtain a Valid LOI as six months has already lapsed. The PP submitted Letter No Lr.No.1182/R4-2/2008 dated 17.07.2016 issued by Department of Geology and Mining, Govt of Andhra Pradesh wherein PP was requested to submit the copy of valid mining plan/scheme/EC/CFE &CFO or

acknowledgment for filling the same for taking further action for grant of lease. The Committee observed that as time period for submission of the above documents was not mentioned in the aforesaid letter, it may be assumed that Govt of Andhra Pradesh has extended the validity of LoI till the submission of the above documents.

Observation of EAC: On viewing the KML file committee observed that there are other mining leases adjacent to this mining lease. Although when the proposal was initially considered it was category A project but now as S.O. 3997(E) dated 14.08.2017 the project is category B project and PP needs to provide the details of the cluster if any forming. The PP submitted that mining lease adjacent to the lease was granted before 09.09.2013 and does not required to be considered while calculating the cluster area as per S.O.2269(E) dated 1.07.2016.

The mining Plan along with Progressive Mine Closure Plan was approved by Office of the Joint Director of Mines and Geology, Govt. of A.P., Hyderabad vide Letter No. 7356/MP-KNL/2012 dated 28.02.2013. EAC sought clarification on the forest land involved in the mining lease. PP submitted that they have approached DMG & Forest Department, and after site verification was done by both the agencies. With safety barrier of 50 meters as proposed by Forest Department, the revised mine lease sketch and lease boundary coordinate got changed. The Mining Plan along with Progressive Mine Closure Plan was modified and approved by Office of the Joint Director of Mines and Geology, Govt. of A.P., Hyderabad vide Letter No. 4130/MMP-KNL/2017 dated 02.11.2017. The Committee observed that there is public roads and other geographical constraints in the mine lease area, for which necessary safety zone is required to be provided. Accordingly, there are changes in this mining plan was required as compared to initial mining plan. The PP thus again Modified the Mining Plan along with Progressive Mine Closure Plan and got approved by Office of the Joint Director of Mines and Geology, Govt. of A.P., Hyderabad vide Letter No. 426/MMP-KNL/2019 dated 15.02.2019. The PP also submitted a letter No 426/MMP-KNL/2019 dated 15.02.2019 wherein it has mentioned that "*The contents of the Modifications to the Approved Modified Mining Plan and Approved Mining Plan are identical except the Revision of Reserves due to rectification of numerical calculations and provision of safety buffer zones. The document has been prepared based on the guidelines issued as per G.O.Ms.No.56 and Form-T. The Financial Assurance has been revised based on MCDR 2017*". The PP submitted an undertaking vide letter dated 30.06.2018 that agricultural field will be excluded at the time of execution of mining lease and mining plan will be revised for the reduced area.

Observation of EAC: The Committee observed that in initial mining plan submitted by PP, at conceptual stage, mining lease area of 53.8110 Ha will be under excavation, 0.1468 ha will be for top soil storage, 7.9450 ha will be for overburden dumps, 6.6340 Ha will be under 7.5 safety barrier, 0.5020 will under mineral storage, 0.0010 Ha under infrastructure, 0.3350 Ha under roads, 0.50 Ha for environmental protective measure, 0.0010 Ha under monsoon water flow channel, 2.0 Ha under plantation and 1.2372 ha un-used area. The Committee observed that current mining plan is only for five years and for a very limited period and thus did not bring out the details at conceptual stage. Further, PP during the meeting mentioned that the active mining area is now reduced to 25.9492 Ha and the remaining area 47.1638 ha will not be

excavated. The Committee observed that PP should submit the modified mining plan with all the restrictions as proposed by EAC and Forest Department, clearly showing the land use pattern at conceptual stage. The total mineable reserves and blocked reserves needs to be mentioned along with life of mine. With reduction in active area of mining, PP need to clearly bring out the land use area viz. area for infrastructure and waste/top soil dumping, and other details like waste to be generated during the entire life of mine and where it will be dumped/backfilled.

The proponent submitted that the mine will be operated by the open cast mechanized method of mining, which includes drilling, blasting, loading and transportation by deploying mining machinery.

The PP submitted that the water table in the locality is at a depth of 12 to 15 meters below the general ground level. The lowest ground level is 415 m MSL recorded at western side of AML area. The ground water table is expected to be at 400m MSL. The ultimate workings will reach upto 415m MSL. The water table is below 15m ultimate working depth i.e., 400m MSL, therefore, level mining operations will not intersect the water table. The water requirement is estimated to be about 10m³/day - about 2m³/day for domestic purpose, 6 m³/day, for dust suppression and 2 m³/day for greenbelt development. The PP submitted that no bore well is proposed within the mining lease area.

Observation of EAC: - The source of water has not been provided. The PP needs to submit the source of water.

The PP proposes to develop 6.634 Ha under greenbelt which includes 7.5m width barrier zone [4.634 Ha out of which 2.0 Ha during 1st - 5 years and rest from 2nd - 5 years up to conceptual period and road side plantations [2.0 Ha out of which 0.5 Ha during 1st 5 years and rest from 2nd 5 year up to conceptual period]. The PP Proposes to plant total 16585 saplings [6250 saplings during 1st 5 years and rest from 2nd 5 years up to conceptual period]. The PP proposes to plant Neem, Siris, Sisham, Amaltas, Karanj, Jungir Jalebi, Eucayptus, Kanju, and Sharifa. In addition, Acacia mangium, Delonix Regia, Garuga pinnata, Leuceana leucocephala, Syzygium cuntinil, Feronia sp., Phylanthus sp., Madhuca .sp., Magnifera sp., etc. The PP earmarked Rs. 2.3 Lakh (capital Cost) and 1.5 Lakh (Recurring Cost) for development of Green Belt. The PP vide its letter dated 20.07.2018 revised the budget for plantation to Rs 2.5 Lakh (capital) and 0.5 Lakh (recurring).

Observation of EAC: - The Committee observed that in the EIA Report the recurring expenditure for plantation is only for 10 years but the life of mine is more than 10 years. Further, as the active mining area is now reduced the PP has more area for plantation. Thus, PP needs to submit the revised plantation plan based on the life of mine and provide the details of species to be planted, density of plantation, time line for plantation and year wise capital and recurring budget for the same.

The proponent submitted that the Mining Lease is not part of Madhavaram Reserved Forest. The ML area was surveyed and a detailed surveyed map authenticated by DDM&G Kurnool was provided. As per the detailed survey carried

out there is no forest land involved in the ML area. However, variation in the earlier ML sketch and present joint survey ML sketch was observed is true north orientation. The proponent submitted that they have approached Govt of Andhra Pradesh, Forest Department for inspection of the site. Forest Range officer, Dhone along with his staff and SBWL has inspected the proposed ML area. The Project Proponent has obtained the NOC from the forest department and Forest Department vide LR No 2922/2017/I-16 dated 13.11.2017, wherein inter alia it has mentioned that i) the mining lease is falling at a distance of 50 meters from compartment no 256, nearest Reserve Forest Madhavaram Forest, ii) There is no forest land inside the mining lease area, iii) There are no endangered species of flora existing in the area as well as buffer zone and it has neither ecological nor economic importance and most of the area consists of barren hills scarcely covered with normal species of shrubs & bushes. The study area does not inhabit any thick vegetal cover there is usually thin grass which may appear during short rainy season.

The Committee noted that proponent submitted the Lr. No. 1182/R4- 2/2008 dated 17.08.2017 issued by Director of Mines & Geology, Andhra Pradesh wherein, the Deputy Director Mines & Geology was directed to depute the supervisor for the surveying the mining lease area.

PP submitted the mining lease plan along with the geo-coordinates duly authenticated by Asst. Director of Mines & Geology, Kurnool. PP submitted that based on the revised ML boundaries authenticated by Govt of Andhra Pradesh, Department of Mines and Geology and as per NOC and conditions issued by Govt of Andhra Pradesh, Forest Department, the mining plan was modified and approval was obtained on 02-11-2017. The Project Proponent submits that there are no changes in the survey numbers, jurisdiction, and mining Lease area and production capacity.

The PP submitted the certificate issued by Forest Department, Govt of Andhra Pradesh vide Lr No.2922/2017/H6 dated 23.01.2018 wherein the list of schedule-1 species is provided. It is observed that there is no schedule-1 species present in the study area and mining lease.

The proponent submitted letter No.4067/M4/2017 dated 26.09.2017 & No.8227/M4/2006 dated 08.06.2018 issued by Department of Mines & Geology thereby submitting a report on Dolomite occurrence. PP submitted a copy of DSR as required as per S.O 141(E) dated 15.01.2016 and also informed that it is available on the website of the State Govt. of Andhra Pradesh at <http://www.kurnool.ap.gov.in/newsTitles.apo?mode=getNewsDetails&id=871>.

The PP has submitted the baseline data which includes i) Socio-economic study ,ii) Ambient air quality study comprising gaseous, particulate matter at 6 different locations, iv) Water quality analysis in 10 different locations (Bore well samples), v) Noise levels monitoring in 6 different locations, vi) Soil quality analysis in 5 locations, vii) Flora & Fauna status, viii) Land use pattern study and ix) Hydrological study have been carried out during summer Season (March 2016 – May 2016). The PP submitted that ambient air quality was monitored through network of 6 monitoring stations and the existing Ambient Air Quality levels in the monitored locations for PM₁₀, PM_{2.5}, SO₂

and NO₂, are within the prescribed NAAQ limits. The Noise levels were monitored through network of 6 monitoring stations and the results are well within the limit. The water quality of the collected 10 ground water samples was found to be within the prescribed permissible limits of IS: 10500:2012 Norms for Drinking. The PP in submission made on 19.02.2018 submitted that the post project Concentrations of PM₁₀, PM_{2.5}, SO₂, NO_x & CO (GLC) (base line + incremental) in the AAQ monitored locations due to mining after adopting necessary control measures will be well within the prescribed AAQS limits. The PP submitted the NABET Accreditation Certificate of the consultant for the period 21.02.2014 to 14.11.2016, 16.11.2016 to Sep 2017, 18.09.2017 to 22.06.2018, and 22.06.2018 to 12.11.2019. PP also submitted the accreditation certificate of laboratory for the period 14.11.2014 to 13.11.2016 & 14.11.2016 to 13.11.2018, where sample were analyzed.

PP reported that there is no court case/ litigation pending against the project.

The public hearing for the project was conducted by Andhra Pradesh State Pollution Control Board (APSPCB) on 6th January 2017, under the Chairmanship of Shri C. Hari Kiran, Additional District Magistrate, Kurnool, at 11:00 AM at Grampanchayat office, Kanappakunta, Dhone Mandal, Kurnool District, Andhra Pradesh as per the Environmental Impact Assessment Notification dated 14th September, 2006. The advertisement for public hearing was published in '*Sakshi*' (5.12.2016) and '*Hans India*' (05.12.2016). The Committee deliberated on the issues raised during the public hearing and the major issues raised by the local people were related to damage to bore wells, crop damage, adjacent agricultural field belongs to SC Community and has 10 bore wells developed under Indira Jal Prabha Water Scheme & 10 by S.C. Corporation, depletion of ground water table due to blasting, CSR budget for rain water harvesting program, EIA should have study for health status, ground water, and crop production, 33% area should be under green belt, planting of medicinal & fruit bearing plants as green belt, construction of rain water harvesting structures, to implement the EMP mentioned in EIA, employment, compensation to villagers for damage, damage to road & houses near the mining lease, control blasting, top soil utilization, overloading of tippers, use of CSR fund for laying of roads and drinking water facility, skill development program. The Commitment made by PP during the PH includes control blasting, water spraying, transportation by covered trucks, baseline data of crop yield will be taken into consideration before starting mining operations, crop compensation, no agricultural will be purchased, initial and periodical medical examination of workers, rainwater storage in excavated pits to recharge ground water, green belt development, implementation of pollution control measures, mining within the lease area, employment to 21 persons, strengthening of village road, over loading of truck will be avoided etc. PP also committed to spent Rs 11.0 Lakh for dust control measures, Rs 15.8 Lakh for Environmental Management Plan, Rs 17.5 Lakh for socio-economic welfare activities under CSR, and Rs 1.5 Lakh for skill development. The Committee observed that PP vide its letter dated 20.07.2018 revised the amount proposed under EMP from 26.8 Lakh to 15.8 Lakh (Capital) & 16.0 Lakh (recurring), revised the budget proposed under CER from 19.0 Lakh to 28.7 Lakh. The PP submitted that budget earmarked for plantation under EMP is 2.5 Lakh (Capital) and Rs 0.5 Lakh (Recurring).

Comment of PD: The Committee observed that in the Minutes of Public Hearing it has mentioned that land belongs to depressed people and this fact was ignored while granting mining lease. PP has submitted that the entire mining lease is government land and submitted a letter No D.Dis/51/2007/ dated 15.12.2007 issued by Thasildar, Dhone wherein the survey number in which lease is falling is mentioned as AW (Govt land). However, Committee observed that in the appraisal happened so far, the EAC has already restricted the mining on agricultural land. The PP has already submitted an undertaking on 30.06.2018 in this regard wherein it has mentioned that mining will not be carried out in agricultural field. Agricultural fields will be excluded from the mining lease at the time of lease execution and mining plan will be revised for the reduced area.

PP initially proposed a budget of Rs 17.5 Lakh for socio-economic welfare activities under CSR, and Rs 1.5 Lakh for skill development. But later on vide its LR SBW/MoEF&CC/2018 dated 20.07.2018 submitted that the total budget for CER shall be ₹28.7 Lakhs, which includes a) ₹ 1.20 Lakhs for construction of rainwater harvesting structures at shallow areas of village Kannnappakunta (4pit) and Kamalapuram (2 pits), b) ₹ 2.50 Lakhs for construction of bore well to the nearby village (Kannnappakunta near to agriculture fields), c) ₹ 14.00 Lakhs for strengthening of road (connecting Kannnappakunta and Kamalapuram-3.5 km), d) ₹2.00 Lakhs for repairing & deepening of the non-working bore wells , e) ₹3.00 Lakhs for distillation of village ponds, providing bus shelter, f) ₹5.0 Lakhs for provision of computer to the school and g) ₹1.00 Lakhs for supporting sanitary needs for girls students (napkins).

The PP has submitted that mine lease area consists of Government Waste Land. There is no habitation or private land in the mine area. Hence, there is no rehabilitation and resettlement in this project.

The Project Proponent initially proposed a budget of Rs 15.8 Lakh for Environmental Management Plan (EMP) but later on vide its LR SBW/MoEF&CC/2018 dated 20.07.2018 submitted that the total budget for implementation of Environmental Management Plan (EMP) shall be ₹ 15.8 Lakhs (capital) and ₹16.0 Lakh (recurring), which includes a) ₹ 11.0 Lakhs (Capital) & ₹4.0 Lakh (recurring) for deploying of water tanker for dust suppression- 5 kl capacity, b) ₹ 1.05 Lakh (Capital) & ₹0.85 Lakh (recurring) pre-medical examination of 21 persons, ₹0.63 Lakh (Capital) & ₹0.65 Lakh (recurring) for providing personnel protection equipment to 21 persons), ₹2.5 Lakh (Capital) & ₹0.5 Lakh (recurring) for greenbelt development in 6.63 Ha area @1500 saplings/Ha, ₹0.50 Lakh for construction of septic tank followed by soak pit (3 kl capacity), and ₹0.12 Lakh for rainwater harvesting pit (storm trenches and pit within ML area), and environmental monitoring ₹ 10.0 Lakh.

Observation of EAC: The Committee observed the total recurring expenditure and number of years needs to be submitted.

The Project Proponent submitted that that budget (capital cost) earmarked for **occupation health** shall be ₹ 1.05 Lakh pre-medical examination of 21 persons,

0.63 Lakh providing personnel protection equipment to 21 persons), and recurring cost for occupation health shall be ₹0.85 Lakh premedical examination, 0.65 Lakh for wear and tear replacement of personnel protection equipment of 21 persons. The capital cost shall be spent before commencement of mining operation and recurring cost annually.

The Project Proponent submitted that the total project cost shall be ₹ 60 Lakh and shall give direct employment to 21 persons.

Observation of EAC: The Committee observed that at ToR stage the PP has mentioned project cost as 2 Cr and now the same has been reduced to 60 Lakh. The Committee observed that PP has enhanced the budget for EMP, CER etc. thus PP needs to submit the revised project cost considering all the budgetary provisions and commitment made during the appraisal process and public hearing.

The PP vide its letter dated 27.06.2019 informed the Ministry that PP has changed the consultant from M/s B.S. Envitech Consultants, Hyderabad to M/s Ind Tech House Consult, New Delhi for this project. PP also submitted a No Objection Certificate issued by M/s B.S. Envitech Consultants, Hyderabad vide Lr No BSET/BW/2019 dated 08.08.2018 wherein it has mentioned that "*we have carried out EIA Study, conduct public hearing and presented the project to EAC (Non-Coal Mining) and also presented the ADS points raised by MoEF&CC from time to time. As desired by the Project Proponent, we have no objection to engage services of any other consultant on the above project*". The Project Proponent and previous consultant also given an undertaking that information provided in EIA Report and additional details (ADS-1,2&3) submitted to the Ministry are factually correct. The new consultant M/s Ind Tech House Consult, New Delhi submitted an undertaking that they have validated the data submitted for the environmental clearance by M/s B.S. Envi-Tech (P) Ltd. and the information provided to the MoEF&CC is factually correct.

Observation of EAC: The committee opined that the consultant performance and deliverable are not satisfactory. The consultants are expected to facilitate the PP and EAC with all necessary support and ensure that the documents and other requirements are placed as per the provision of EIA notifications and OM issued by MoEF&CC. Unfortunately, in the instant case, the PP has been not extended the necessary inputs by the multiple consultants engaged, which has caused uncalled delay in appraisal of the project. The committee advised Ministry to take appropriate measures to ensure non-deliverance by Consultants doesn't delay the appraisal process of projects.

Based on the discussion held and documents submitted the Committee **deferred** the proposal for want of following information:

- a) **PP to submit the cluster certificate as per provision of S.O.2269(E) dated 1.07.2016 to ascertain the cluster situation if any.**

- b) PP should submit the modified mining plan with all the restrictions as proposed by EAC and Forest Department, clearly showing the land use pattern at conceptual stage, progressive mine closure and reclamation activities to be carried out for safe and environmentally friendly closure of the mining operations. The total excavation (mineral, waste, top soil) to be excavated needs to be brought out clearly in production and development plan. The mineable reserves, blocked reserves needs to be mentioned along with life of mine. P should add an annexure showing the year wise production and development plan till the end of life of mine. The location of mineral stacking, dumping sites, plantation and other infrastructures needs to be brought out clearly. The PP needs to bring out the waste to be generated during the entire life of mine and where it will be dumped/backfilled.
- c) PP needs to provide the water table in BGL. In addition to this PP needs to provide the details from where water will be sourced for this project.
- d) The Committee observed that in the EIA Report the recurring expenditure for plantation is only for 10 years but the life of mine is more than 10 years. Further, as the active mining area is now reduced the area under plantation will increase. Thus, PP needs to submit the revised plantation plan based on the life of mine and provide the details of species to be planted, density of plantation, time line for plantation and year wise capital and recurring budget for the same.
- e) PP needs to submit details on resource deployment in environment management cell for implementation of EMP and its associated budgetary provision and recurring expenditure.
- f) There is change in Project cost and PP has enhanced the budget for EMP, CER etc., consequent to discussion during appraisal by EAC. Accordingly, PP needs to submit the revised project cost considering all the budgetary provisions and commitment made during the appraisal process and public hearing.
- g) PP should submit an undertaking through affidavit for compliance of all statutory requirements and Common Cause Judgment dated 02.08.2017.

2.4. Enhancement of production capacity of Iron Ore from 4.50 million TPA (2.85 million TPA ROM iron ore + 1.65 million TPA low grade iron ore from old low grade ore stacks & dumps) to 8.06 million TPA (7.0 MTPA ROM Iron Ore + dry screening and crushing of 1.06 MTPA low grade iron ore from old dumps/stacks within lease area) of M/s Rungta Sons Pvt. Ltd., located at villages Sanindpur&Oraghat, Tehsil – Koira, District – Sundargarh, Odisha (MLA 147.10ha). (New File No:IA-J-11015/107/2018-IA-II(M); New Proposal No:IA/OR/MIN/77080/2018; Old File No:J-11015/206/2012.IA.II (M); Old Proposal No: IA/OR/MIN/90577/2012; Consultant: Ecomen Laboratories Pvt. Ltd.)-Reconsideration of EC.

The proposal of M/s Rungta Sons Pvt. Ltd. for enhancement of production capacity of Iron Ore from 4.50 million TPA (2.85 MTPA ROM Iron ore + 1.65 MTPA of low grade iron ore from old low grade ore stacks & dumps) to 8.06 million TPA (7.0 million TPA Iron ore (ROM) + dry screening and crushing of 1.06 million TPA low grade iron ore from old dumps/stacks within lease area) in the min lease area of 147.10 ha. The mine lease area is located in village(s) Sanindpur and Oraghat, Koira Tehsil, Sundargarh District, Odisha. The mine lease area is bounded by Latitude and Longitude of 21° 55' 18.114" to 21° 55' 54.912" N & 85° 17' 19.494" to 85° 18' 29.968" E in the Survey of India Toposheet No.73G/5 (F45N5).

Project proponent (PP) submitted that the proposal of TOR was earlier considered by the Expert Appraisal Committee in its meeting held during September 28-29, 2018 and the TOR was issued by the Ministry vide letter no. J-11015/107/2018-IA-II (M) dated 12th October 2018. PP submitted the EIA/EMP Report to Ministry for seeking environmental clearance.

PP submitted that the total lease area is 147.10 hectares. Out of 147.10 ha, 126.324 ha is forest land and 20.776 ha is non-forest land. PP has obtained forest clearance for 68.135 ha (52.742 ha + 15.393 ha). The forest clearance for 52.742 ha (involving 38.591 ha of protected forest + 13.791 ha DLC forest and 0.360 ha PRF) was obtained vide Ministry's letter no. 8-135/2003-FC dated 19.06.2006 and further for 15.393 ha (including 4.325 ha of forest land to be maintained as safety zone) vide Ministry's letter No. 8-135/2003-FC (vol.), dated 24.10.2013. The remaining 58.189 ha (126.324 ha - 68.135 ha) of forest land and 0.174 ha of non-forest land (total 58.363 ha) was proposed for surrender by the lessee in the application for 1st renewal of mining lease for reduced area over 88.737 ha (147.10 - 58.363 ha). However, in pursuance to Section 8-A(6) of MMDR Amendment Act, 2015 the period of the original mining lease has been extended up to 05.09.2035 over the entire mining lease of 147.10 ha by execution of supplementary lease deed on 14.07.2016. Therefore, the PP has applied online for obtaining forest clearance vide Proposal No. FP/OR/MIN/35045/2018, dated 30.07.2018 for the balance 58.189 ha of unbroken forest land (earlier proposed for surrender) as well as 1.417 ha of forest land for mining purpose which was earlier diverted for safety zone i.e.; total forest land to be diverted is 59.606 ha (58.189 ha + 1.417 ha) included within the existing mining lease area over 147.10 ha. Out of 59.606 ha forest land 57.515 ha will be used for mining and ancillary activities and 2.091 ha will be maintained as safety zone. The forest clearance for 59.606 ha is still under progress. However, PP submitted that the NPV amount for the total forest land was paid by PP to DFO, Bonai Division, Bonai, District-Sundargarh. PP submitted the site specific wildlife conservation plan for 114 Lakhs from the office of the PCCF and Chief Wildlife Warden vide letter no.6640 dated 31.10.2009. PP further submitted that the list of Schedule I species such as Elephant, Sloth Bear & Godhi is included in the earlier approval letter dated 31.10.2009.

However, the PP vide letter no. RSPL/ED/GEO/2019-20/155A dated 17.04.2019 submitted that the Site Specific conservation plan for Schedule I species such as Elephant, Sloth Bear & Godhi is submitted to Divisional Forest Officer, Bonai, District-Sundargarh for approval and the same is under process.

PP submitted that the lease deed was granted on 06.09.1985 for 20 years which was valid up to 05.09.2005 and the PP had continued to conduct mining operation in the said lease under the deemed extension provisions of section 8 of the MMDR Act, 1957 with the permission from the Government. Now, the supplementary leased deed was executed on 14.07.2016 as per the Amended MMDR Act, 2015 and the lease validity is extended up to 05 September 2035. The PP submitted that the Modified mining plan including progressive mine closure plan over an area of 147.10 ha has been approved by IBM, Bhubaneswar vide letter no. MPM/FM/10-ORI/BHU/2018-19 dated 18.07.2018 which is valid up to 31.03.2020.

PP reported that the mine was accorded environmental clearance by the Ministry, vide letter no. J-11015/206/2012-IA.II (M), dated 19.11.2013 for 2.85 MTPA of ROM Iron ore, 1.65 MTPA of low grade iron ore from old low grade ore stacks & dumps (total handling 4.5 million TPA) and installation of wet beneficiation plant of 1.44 MTPA capacity over mining lease area of 88.911 ha {68.135 ha (forest area for which FC is available) + 20.776 ha (non-forest area)}. Now it is proposed to increase the production of ROM from 4.50 million TPA to total handling of 8.06 million TPA which includes 7.0 million ROM excavation from mine + dry screening and crushing of 1.06 million TPA low grade iron ore from old dumps/stacks within lease area. EC for wet beneficiation plant with throughput capacity of 1.44 MTPA has already been accorded in the environmental clearance by the Ministry, vide letter no. J-11015/206/2012-IA.II (M), dated 19.11.2013 and the same will continue. PP further submitted that at present, the production of the mine is from excavation of Iron ore (ROM) from the mine and then dry screening and crushing of iron ore for different grade and size of ore. Low grade ore from old stacks and dumps within mine lease area are also crushed and screened to obtain different fractions of ore. The low grade ore produced from the dry crushing and screening process is upgraded through wet beneficiation unit. PP also mentioned that there is no production of Bauxite at present and also not proposed in future. PP submitted the existing land use patterns which are area excavated (27.85 ha), Over burden/dump (16.16 ha), Mineral storage (2.84 ha), Infrastructure (2.10 ha), Roads (1.20 ha), Green belt & plantation (7.0 ha), Mineral processing plant (2.518 ha), Mine Camp (0.60 ha), Beneficiation plant & Tailing pond (5.92 ha), other purpose (0.65 ha) and Unutilized land (80.262 ha), respectively. PP also submitted the proposed land use pattern which are area excavated (96.92 ha), Over burden/dump (14.11 ha), Mineral storage (4.67 ha), Infrastructure (2.688 ha), Roads (2.991 ha), Green belt & plantation (10.465 ha),

Mineral processing plant (0.856 ha), Mine Camp (0.50 ha), Beneficiation plant & Tailing pond (13.25 ha), and other purpose (0.65 ha), respectively.

PP submitted that the total geological reserve of iron ore as per approved mining scheme is 65.17 million tonnes and life of the mine is around 8 years. PP further submitted that the mining method will be opencast mining with mechanized drilling with 110 mm drill machine, deep hole blasting, excavation by excavator of capacity 3.2 m³/2.6 m³ and stacking by loader of 1.7 m³ will be done. The existing in-pit crushing & screening of iron ore will continue. During the mining Scheme period 2019-20, major production will be obtained from C-Top Quarry. The target production will be achieved by developing the benches of 6-9 m height with width upto 10-20 m. The ROM and low grade ore produced will be hauled through trucks/dumpers to dry screening & crushing plants as well as wet beneficiation plants. After processing, the finished iron ore products will be carried to the Railway sidings by trucks and loaded into Rail wagons and dispatched mainly to the steel, pelletisation, sponge, sinter plants throughout India and also to port for export. The Overburden waste materials to be generated consists of lateritic soil/ laterite/ shale/BHJ/BHQ having less than 45% Fe content. The existing over burden material lying in dumps A, B, & C is 2560646 m³. During 2018-19 & 2019-20 overburden waste material of 2306790 m³ / 4613580 tonnage (MT) will be generated which will be dumped on waste dumps i.e Dumps 'B' and Dump 'D' within the mining lease area, which after stabilization will be rehabilitated with native plant species. Further, the overburden waste material of 6253410 m³/12506820 MT to be generated after 2019-20 till life of the mine will be backfilled in the ore exhausted quarries and will be rehabilitated by native plant species. Out of proposed production of 8.06 MTPA of iron ore in the year 2019-20 the ROM iron ore production/excavation will be 7.0 MTPA for which the total excavation for 2019-20 will be 4252579 m³/10014960 MT, out of which 1507480 m³/3014960 MT will be overburden material/waste. There will be no ore production from the overburden waste to be generated from 2018-19 till life of the mine. PP further submitted that at the end of life of the mine, 58.21 hectare of exhausted quarry area will be back filled and developed for plantation.

PP submitted that the total water requirement at present is 1288 KLD (1178 KLD of surface water for industrial use/environmental maintenance + 110 KLD of ground water for drinking and domestic use only). PP further submitted that at present, the permission from Department of Water Resources (DOWR), Govt. of Odisha for drawl of 1178 KLD of surface water from Suna Nadi and 110 KLD of ground water is available with the PP. Total water requirement after expansion will be 3089 KLD (2839 KLD from surface water and 250 KLD from ground water). PP submitted that the NOC for withdrawal of 250 KLD of ground water was obtained from CGWA vide letter no. 21-4(201)/SER/CGWA/2009-1832 dated 10 December 2015. PP

further submitted the renewal of NOC for ground water withdrawals vide NOC No: CGWA/NOC/MIN/ORIG/2019/4993 dated 20.03.2019.

PP submitted that the mine is in operation since 1986. Presently the mine is in operation with due compliance of the order dated 02.08.2017 in CWP No. 114/2014 of Hon'ble Supreme Court. The details are as follows:

S. No.	Issues	PP submission
1	Compliance of the order dated 02.08.2017 in CWP No. 114/2014 of Hon'ble Supreme Court	The Deputy Director of Mines Koirā, Govt. of Odisha, vide Memo No 1555/Mines, dated 09.04.2018 has issued a certificate that presently the mine is working with all valid the statutory clearances and in compliance of the Hon'ble Supreme Court Order dated 02.08.2017 in WP (C)-114/ 2014.
2	Details of demand if any raised by Department of Mining & Geology, Govt. of Odisha.	Demand Note No 5064/Mines dated 02.09.2017 for Rs. 109,26,17,667.03/- (Rupees one hundred Nine Crore Twenty Six Lakhs Seventeen Thousand Six Hundred Sixty Seven & three paise only) was issued by Deptt. of Mines, Govt. of Odisha vide letter No. 5064/Mines, dated 02.09.2017, towards compensation under section 21(5) of MMDR Act, 1957 for production beyond EC Limit prescribed under E(P) Act, 1986.
3	Details of payment, if any made to Department of Mines & Geology, Govt. of Odisha.	Project Proponent reported that the payment of Rs. 109,26,17,668/- (Rupees One Hundred Nine Core Twenty Six Lakhs Seventeen Thousand Six Hundred Sixty Eight Only) has been made online to Deptt. of Steel & Mines, Govt. of Odisha, vide E- Challan No. 8443/94, dated 27.12.2017. E Receipt of SBI which was issued for the remittance of Rs 109,26,17,668/- in Treasury Challan Ref No. 27DDE007B0, dt. 26.12.2017.
4	Details of past production of mine since its inception, duly authenticated by Department of Mines & Geology, Govt. of Odisha.	The details of the past production figure from 1986 to 2016-17 is duly authenticated by the DDM, Koirā, has been submitted by the PP. The Committee noted that as per the Certificate provided by the Govt. of Odisha dated 09.04.2018, the PP has not enhanced the production capacity after grant of EC on 19.11.2013 and mined out the mineral within the EC capacity of 4.5 million TPA of Iron Ore. The PP has submitted an affidavit dated 16.09.2018 in compliance of Ministry's OM dated 30.05.2018 in respect of the order of Hon'ble of Supreme Court dated 02.8.2017 in W.P.(C) No. 114/2014.

PP submitted that the baseline data have been carried during March-May, 2018 for 3 Months. PP further submitted that the Micrometeorology, Ambient air quality, Water quality, Water flow measurement, Noise level, Soil quality, Socio-economic & Biodiversity study was carried out within 10 km radius of the lease area. The ambient air quality was monitored at 8 locations, Out of 8 locations the maximum PM₁₀ found within lease (Mining area) was 85.50 µg/m³ and minimum value 50.50 µg/m³ was found in Sagasahi village. Similarly the maximum PM_{2.5} found within lease (Mining area) was 55.13 µg/m³ and the minimum value 25.70 µg/m³ was found in Sagasahi village. Highest SO₂ (16.86 µg/m³) value was within lease (Mining area) and lowest SO₂ value (6.64 µg/m³) was in Deoghar. Similarly, the highest NO₂ (28.87 µg/m³) value was found in Mine Area (Within lease) and lowest NO₂ value (11.80 µg/m³) was recorded at Sana Indpur. The PP further submitted that the air quality modelling namely ISCST (Industrial Source Complex-Short Term ISC-3) model has been used for increased capacity production (including total excavation, number of trips etc) and the incremental values for different pollutants were assessed. Incremental values for PM₁₀, PM_{2.5}, NO₂ and SO₂ assessed through model and post project concentrations were estimated and found to be 84.76 µg/m³ (Sargigarh), 56.62 µg/m³ (Sargigarh), 24.89 µg/m³ (Deoghar) and 8.80 µg/m³ (Gharburhani) respectively. PP further submitted that post project expansion concentrations are also within prescribed limit. PP further submitted the water quality was monitored at 7 locations, the surface water (3 samples) and ground water (4 samples) samples analysis revealed that all the parameters are well within the prescribed limit of IS:2296C and IS: 10500. The noise level survey was carried out at 8 locations, the ambient noise level within Lease were found to be 64.5 & 65.2 dB(A) in day time and 60.30 & 61.20 dB(A) in night time respectively. PP further submitted that all the values are well within the prescribed limit of 75 and 70 dB(A), for industrial area in day and night time respectively. Similarly, at Sana Indpur, Sargigarh village, Gharburhani Village, Sagasahi village, Deoghar village and Silijora village the noise levels were also within the prescribed limit 55 dB(A) & 45 dB(A) for residential area in day and night time respectively.

PP submitted that the Public Hearing was conducted by State Pollution Control Board on 28.12.2018 at open ground near Sanindpur Chawk at Sanindpur Village, Tehsil Koira in Sundargarh District. The Public Hearing was chaired by the Shri Bhaskar Chandra Turuk, Additional District Magistrate, Sundargarh. About 450 participants had attended the public hearing meeting, about 235 persons have put their signature in the attendance sheet, 43 persons took part in the deliberation and 23 written statements have been received from various stakeholders on the day of public hearing. The major points raised by the public are Peripheral development of the area including infrastructural development, environmental protection and pollution control, Employment generation, drinking water, Education/skill development, medical/health care facilities and promotion of Agriculture /Plantation.

PP has submitted the detail point wise compliance with budgetary provision and time bound action plan. The Committee deliberated the issues raised during the PH and its action plan.

PP submitted the compliance report from MoEF&CC Regional Office Bhubaneswar, vide letter no. 101-868/EPE dated 18.07.2018 for earlier EC J-11015/206/2012-IA.II (M) dated 19.11.2013. The Committee has deliberated the point wise compliance of Environmental Clearance. The report, inter-alia, mentioned that the project authority has complied or are in process of complying with the conditions stipulated by the Ministry. The certain information /action plan have been sought on the following points (i) It is required to increase the green belt area by planting more plants during ongoing monsoon period and also put stress to achieve optimum plantation density i.e. 2500 plant per ha in plantation area/non-plantation area including safety zone, (ii) It is required to maintain the density of the plantation on the boundary of ML area towards Sona river and (iii) It is required to clean all the rain water harvesting structure/pit before and after the monsoon. PP further submitted the updated compliance report from RO MoEF&CC, Bhubaneswar, vide letter no.101-868/EPE/1099 dated 26.06.2019 which mentioned that the PP is complied or are in process of complying the conditions stipulated by the Ministry.

It is informed to the Committee that the Ministry of Mines, vide Notification No.S.O.2817 (E) dated 22nd November, 2010 had appointed a Commission of Inquiry consisting Justice M.B. Shah, retired Judge of the Supreme Court of India, for the purpose of making an inquiry in to mining of iron ore and manganese ore in contravention of the provision of various Statues and the rules and regulations issued there under, in various States including the State of Odisha. In view of Justice Shah Commission report (2013), the Ministry of Environment, Forest and Climate Change (MoEF&CC) has entrusted the work to CSIR-NEERI to conduct a Carrying Capacity Study with an objective to develop (i) a sustainable development plan for mining activities in the impact area of about 1000 sq.km., in the State of Odisha and (ii) an environmental management plan for current as well as future developmental scenario. CSIR-NEERI has conducted the study encompassing collection of primary data for various environmental components (viz. air, noise, water, soil/land, biological and socio-economic aspects), collection and analysis of environmental quality data by different mines in the region, modelling for transport scenario and infrastructure need assessment, and meetings/workshops with different stakeholders (like Department of Steel & Mines, Directorate of Mines, IBM-HQ & Regional Office, SPCB, GSI, MoEF&CC, State Forest Dept. etc. as well as senior executives from respective mines). NEERI has submitted the report along with the recommendations. PP has made the point-wise presentation w.r.t. the recommendations of CSIR-NEERI report on carrying capacity study which was included in the TOR condition w.r.t.

mining proposal of Iron Ore and/or manganese in the State of Odisha. The Committee deliberated the response submitted by PP.

PP submitted that the 2 cases are pending against the project. First, the 2(c) C.C. Case No. 54/2013 has been filed in the court of SDJM, Bonai, Sundargarh, for violation of Section 15 of the Environment (Protection) Act, 1986. The said case has been stayed on 28.01.2014 by the Hon'ble High Court of Orissa in CRLMP NO. 38/2014 in Misc. Case No. 20/2014. Last hearing of this case was held on 29.06.2018 with remarks that interim order passed earlier shall continue till the next date of listing. Second, the Revision Application bearing No. 22/(65)/2012/RC-I has been filed by the lessee before the Mines Tribunal, Ministry of Mines, New Delhi against the demand notice dated 20.10.2012 U/s 21(5) of the MMDR Act, 1957, which has been disposed of by Mines Tribunal, Ministry of Mines, Govt. of India, New Delhi on 16.08.2017.

PP submitted that presently 350 nos. of people are directly employed & 400 nos. of persons are indirectly employed in the mine. After the proposed production enhancement, 444 nos. of people will get direct employment and 530 no. of persons will get indirect employment. Indirect employments will be generated through handling of material, transportation etc. which will improve social & economic standing of the people in the locality. PP further submitted that total cost of the project is Rs. 400 Crores, funds allocated for environment management (capital) is 2.0077 Crores, funds allocated for CER is 2.3455 Crores and funds allocated for environment management plan (recurring per annum) is 0.9258 Crores.

The project proposal was considered in the EAC meeting held during March 25-26, 2019 wherein the Committee deferred the proposal and asked the PP to submit requisite information. Accordingly, PP submitted the requisite information and the same examined and the proposal considered again in this EAC meeting. The Committee asked the PP to present the responses. PP replied to the certain clarifications raised by the Committee during deliberation on some of the responses provided by the PP Committee.

Based on the presentation made by PP and the discussion held, the Committee **recommended the proposal for granting environmental clearance for enhancement of production capacity of Iron Ore from 4.50 million TPA (2.85 MTPA ROM Iron ore + 1.65 MTPA of low grade iron ore from old low grade ore stacks & dumps) to 8.06 million TPA (7.0 million TPA Iron ore (ROM) + dry screening and crushing of 1.06 million TPA low grade iron ore from old dumps/stacks within lease area) along with following specific conditions.**

- (i). The mining activity will be restricted to the mine lease area of 88.911 ha {68.135 ha (forest area for which FC is available) + 20.776 ha (non-forest

area)}. Furthermore, no mining activity will be allowed in remaining forest land (59.606 ha) till PP get the forest clearance.

- (ii). PP shall provide a budget of Rs. 3 Crore (0.75% of project cost of Rs. 400 Crores) on CER as per the provisions of OM No. F. No. 22-65/2017-IA-III dated 01 May 2018.
- (iii). PP submitted that the total geological reserve of iron ore as per approved mining scheme is 65.17 million tonnes and accordingly the life of mine is 8 years as per the present reserve.
- (iv). PP shall adhere with the permitted quantity for water withdrawal as specified by CGWA and DOWR, Govt. of Odisha. Additionally, PP requires to adopt best water conservation and harvesting measures to reduce its water requirement.
- (v). PP mentioned that there is no production of Bauxite at present and also not proposed in future. PP should adhere the same.
- (vi). PP mentioned that the Site Specific Conservation Plan for Schedule I species is submitted for approval. PP should adhere with the Site Specific Conservation Plan for Schedule I species as approved by the Competent Authority.
- (vii). This EC for expansion proposal {Iron Ore from 4.50 million TPA (2.85 MTPA ROM Iron ore + 1.65 MTPA of low grade iron ore from old low grade ore stacks & dumps) to 8.06 million TPA (7.0 million TPA Iron ore (ROM) + dry screening and crushing of 1.06 million TPA low grade iron ore from old dumps/stacks within lease area)} shall be operational after submission of an undertaking through affidavit to MoEF & CC within 15 days of receipt of this letter, for compliance of all the conditions prescribed herein.

The Committee has also deliberated the various specific recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha. There are recommendation which needs to be implemented by the State Govt. of Odisha and Project Proponent. Based on detailed deliberations on the recommendations of the carrying capacity study report, the Committee has also **recommended the following specific conditions viz.**

- 1) Project Proponent and Department of Steel & Mines, Govt. of Odisha shall ensure the implementation of recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha.
- 2) Department of Steel & Mines, Govt. of Odisha should prepare 5 years regional plan for annual iron ore requirement from the state, which in turn shall be met from different mines/zones (e.g. Joda, Koira.) in the state. Accordingly,

sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.

- 3) Project Proponent shall construct the cement concrete road from mine entrance and exit to the main road with proper drainage system and green belt development along the roads and also construction of road with minimum 300 m inside the mine. This should be done within one year for existing mines and new mine should have since beginning. The Department of Steel & Mines, Govt. of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has not constructed proper cement concrete road as suggested. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.
- 4) The Committee observed that as per the recommendations of NEERI report the PP needs to do regular vacuum cleaning of all mineral carrying roads aiming at "zero dust re-suspension" within 3 months. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.
- 5) Project Proponent shall monitor the environmental quality parameters as per EC and CTE/CTO conditions, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEF&CC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable Acts.
- 6) Project Proponent shall ensure the compliance of Suggested Ore Transport Mode (SOTM) with association of the State Government of Odisha. All existing mines should ensure adoption of SOTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning itself, and should have system in place within next 5 years.
- 7) The State Govt. of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha. Progress on development of dust free roads, implementation of SOTM, increased use of existing rail network, development of additional railway

network/conveyor belt/ pipelines etc. shall be submitted periodically to Regional office of the MoEF&CC.

- 8) Project Proponent shall develop the parking plazas for trucks with proper basic amenities/ facilities inside the mine. This should be done within one year for existing mines and new mines should have since beginning. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.
- 9) Department of Steel & Mines shall ensure the construction of NH 215 as minimum 4 lane road with proper drainage system and plantation and subsequent regular maintenance of the road as per IRC guidelines. Construction of other mineral carrying roads with proper width and drainage system along with road side plantation to be carried out. This shall be completed within 2 Years.
- 10) Regular vacuum cleaning of all mineral carrying roads aiming at "Zero Dust Re-suspension" shall be adopted by PWD / NHAI/ Mine Lease Holders within a time Period of 3 months for existing roads. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.
- 11) In case the total requirement of iron ore exceeds the suggested limit for that year, permission for annual production by an individual mine may be decided depending on approved EC capacity (for total actual dispatch) and actual production rate of individual mine during last year or any other criteria set by the State Govt., i.e. Dept. of Steel & Mines. Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare in advance mine-wise annual production scenario so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.
- 12) R&D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. R&D studies on utilization of mine wastewater having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept. of Steel & Mines, Individual Mine Lease Holders.

- 13) The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it will be desirable to develop proper rail network in the region. Rail transport shall not only be pollution free mode but also will be much economical option for iron ore transport. The rail network and/or conveyor belt system upto public railway siding needs to be created. The total length of the conveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11 mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length of rail network/ conveyor system for 8 mines (under SOTM 1 & 2) is estimated to be around 95 km. Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxy railway sidings in Koira region. Responsibility: Dept. of Steel & Mines, Govt. of Odisha and Concerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). The Department of Steel & Mines, Govt. of Odisha should follow-up with the concerned Departments and railways so that proposed proper rail network is in place by 2025.
- 14) State Govt. of Odisha shall make all efforts to ensure exhausting all the iron & manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept. of Steel & Mines, Govt. of Odisha.
- 15) **Mining Operations/Process Related:** Project Proponent shall implement the following mitigation measures: (i) Appropriate mining process and machinery (viz. right capacity, fuel efficient) should be selected to carry out various mining operations that generate minimal dust/air pollution, noise, wastewater and solid waste. e.g. drills should either be operated with dust extractors or equipped with water injection system. (ii) After commencement of mining operation, a study should be conducted to assess and quantify emission load generation (in terms of air pollution, noise, waste water and solid waste) from each of the mining activity (including transportation) on annual basis. Efforts should be made to further eliminate/ minimize generation of air pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology. This shall be ensured by the respective mine lease holders. (iii) Various machineries/equipment selected (viz. dumpers, excavators, crushers, screen plants etc.) and transport means should have optimum fuel/power consumption, and their fuel/power consumption should be recorded on monthly basis. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommended time schedule and record should be maintained by the respective mine lease holders. (iv) Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in 3 years for monitoring

land use pattern and mining activity taken place. Further, the extent of pit area excavated should also be demarcated based on remote sensing analysis. This should be done by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of national repute or if done by a private agency, the report shall be vetted/ authenticated by ORSAC, Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders. Responsibility: Individual Mine Lease Holders.

16) **Air Environment Related:** Project Proponent shall implement the following mitigation measures: (i) Fugitive dust emissions from all the sources should be controlled regularly on daily basis. Water spraying arrangement on haul roads, loading and unloading and at other transfer points should be provided and properly maintained. Further, it will be desirable to use water fogging system to minimize water consumption. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the CPCB in this regard. (ii) The core zone of mining activity should be monitored on daily basis. Minimum four ambient air quality monitoring stations should be established in the core zone for SPM, PM₁₀, PM_{2.5}, SO₂, NO_x and CO monitoring. Location of air quality monitoring stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board (based on Emission Load Assessment Study). The number of monitoring locations may be more for larger capacity mines and working in larger area. Out of four stations, one should be online monitoring station in the mines having more than 3 MTPA EC Capacity. (iii) Monitoring in buffer zone should be carried out by SPCB or through NABET accredited agency. In addition, air quality parameters (SPM, PM₁₀, PM_{2.5}, SO₂, NO_x and CO) shall be regularly monitored at locations of nearest human habitation including schools and other public amenities located nearest to source of the dust generation as applicable. (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral. (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine (periodically, near truck entry and exit gate), Responsibility: Individual Mine Lease Holders and SPCB.

17) **Noise and Vibration Related:** Project Proponent shall implement the following mitigation measures: (i) Blasting operation should be carried out only during daytime. Controlled blasting such as Nonel, should be practiced. The mitigation

measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. (ii) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs. (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the noise levels in the report. The data should be used to map the noise generation from different activities and efforts should be made to maintain the noise levels with the acceptable limits of CPCB (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored atleast once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.

- 18) **Water/Wastewater Related:** Project Proponent shall implement the following mitigation measures: (i) In general, the mining operations should be restricted to above ground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro- geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ outcome of such study may be reflected/incorporated in the EIA/EMP report of the mine appropriately. (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flow rate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas and river passing thorough the mine lease area (upstream and downstream locations) should be carried out on monthly basis. (iii) Regular monitoring of ground water level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis. (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region. (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoff etc.) should be taken to prevent pollution of nearby river/other water bodies. Water quality monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted through NABL/ NABET

approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable. (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage treatment plant should be installed for the employees/colony, wherever applicable. (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization. (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls. (xi) Trenches / garland drain should be constructed at the foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease areas and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis. (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water withdrawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.

- 19) **Land/ Soil/ Overburden Related:** Project Proponent shall implement the following mitigation measures: (i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years or as per provisions mentioned in the mine plan/ scheme). The topsoil should be used for land reclamation and plantation appropriately. (ii) Fodder plots should be developed in the non-mineralised area in lieu of use of grazing land, if any. (iii) Over burden/ low grade ore should be stacked at earmarked dump site (s) only and should not be kept active for long period. The dump height should be decided on case to case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes

self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc. (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil, OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data. Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals. (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled area should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating. (vi) Hazardous waste such as, waste oil, lubricants, resin, and coal tar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease Holders.

- 20) **Ecology/Biodiversity (Flora-Fauna) Related:** Project Proponent shall implement the following mitigation measures: (i) All precautionary measures should be taken during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna should be prepared and implemented in consultation with the State Forest and Wildlife Department within the mine lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department. (ii) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner. (iii) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species /grass species/scrubs etc., distance between the plants and survival rate should be recorded. (iv) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for

green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation. (v) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value. (vi) Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status, along with expenditure details. Responsibility: Individual Mine Lease Holders and State Forest & Wildlife Department.

21) **Socio-Economic Related:** Project Proponent shall implement the following mitigation measures: (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities. Further, basic amenities and infrastructure facilities like education, medical, roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region. (ii) Land outtees and land losers/affected people, if any, should be compensated and rehabilitated as per the national/state policy on Resettlement and Rehabilitation. (iii) The socio-economic development in the region should be focused and aligned with the guidelines/initiatives of Govt. of India/ NITI Aayog around prosperity, equality, justice, cleanliness, transparency, employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education, medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for "Samagra Vikas" of these blocks well as other blocks of the district. While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by Ministry of Mines, Govt. of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.

22) **Road Transport Related:** Project Proponent shall implement the following mitigation measures: (i) All the mine lease holders should follow the suggested ore transport mode (SOTM), based on its EC capacity within next 5 years. (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the mine. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport. (iii) Transportation of ore should be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PM₁₀ should be monitored near the

roads towards entry & exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders and Dept. of Steel & Mines.

- 23) **Occupational Health Related:** Project Proponent shall implement the following mitigation measures: (i) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects periodically. (ii) Occupational health surveillance program for all the employees/workers (including casual workers) should be undertaken periodically (on annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately, if needed. (iii) Occupational health and safety measures related awareness programs including identification of work related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis. A full time qualified doctor should be engaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and record should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less) should be conducted followed by follow-up of actions, wherever required. Occupational health centre should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer).

DAY 2: June 28, 2019 (Friday)

2.5 Sitapuram Limestone Mine Over an Area of 770.23 Ha Of M.L-1 & 558.94 Ha Of M.L-2 (Non Forest Land) With Proposed Capacity during Current Mining Scheme Period Of Both The Leases Is 3.0 MTPA Located In Survey No 1/P & 3/P At Dondapadu, Ramapuram And Revoor Villages, District Of Nalgonda. Telangana By M/S Zuari Cement Ltd. [Agenda No. 2.5; File No. J-11015/1/2019-IA-II (M); Proposal No. IA/TG/MIN/81043/2018; [Consultant: **Grass Roots Research and Creation India (P) Ltd.]- Reg Re-Consideration of ToR Proposals**

The proposal of M/s Zuari Cement Ltd. for Mining of Limestone for production of 3.0 MTPA of Limestone, mining area of 770.23 ha of M.L-1 & 558.94 ha of M.L-2 located at Villages-Dondapadu, Ramapuram and Revoor, Tehsil- Mella Cheruvu, District: Nalgonda, Telangana. The applied area forms a part of Survey of India top-sheet no. 57 P/13 and 65D/1. The lease is located at following latitude and longitudes: Latitude: 16°48'56.18"N-16°50'3.10"N to 16°48'9.13"N-16°50'44.73"N,

Longitude: 79°58'20.43"E-80°02'28.63"E to 80°0'1.85"E-79°59'33.91"E, seismic zone-II.

The PP applied online for grant of ToR on 05.10.2018 and submitted the Form-1, Pre-feasibility Report as per EIA Notification dated 14th September, 2006. PP has applied in a single Form-1 for two mining leases the Ministry advised the PP to apply separately for both the mining leases. The PP vide its reply dated 17.11.2018, submitted that Ministry has issued corrigendum vide Lr No. J-11015/63/2003-IA. II (II) dated 4.04.2006 for EC-I [J-11015/63/2003-IA. II(M) dated 9.05.2005; area 777.09 Ha] & EC-2 [J-11015/174/2003-IA. II(M) dated 4.04.2006; area 558.94 Ha] for EC-II. The production of 3.0 MTPA is merged through these two corrigendum & corrigendum is being maintained as EC-I for production of 3.0 MTPA. PP also requested to extend the validation of the said corrigendum. The present application is made pursuant to the notification dated 06.04.2018. There was ambiguity as how corrigendum is divided in two parts. The Ministry then placed the proposal in EAC Meeting held on January 22nd-23rd, 2019, wherein the Committee deferred the proposal as the PP did not attend the meeting. However, the Committee was of the view that *PP should submit the requisite information viz. complete details pertaining to mining lease (initial grant, transfer of mining lease, renewal of mining lease, validity of mining lease as on date), Past production details since the inception of mine duly authenticated from DMG, copy of CTO and CTE, comparative of all the figures (waste, O.B., land use, water requirement, etc.) mentioned in the previous EC and what is proposed now, details of any modification/expansion/amendment/change of scope of work/method of mining etc. if any carried out after grant of EC, any corrigendum/ amendment in EC granted by MoEF&CC. In addition to this the Committee observed that area of mining lease is mentioned as 1336.03 Ha in the Form-1 but EC uploaded in the Form 1 is for the mining lease having area of 777.09 Ha. Thus, PP is requested to provide the complete justification in this regard with supporting documents. The information sought by Committee needs to be submitted within one month.* The PP submitted the information vide its letter dated 20.02.2019.

The PP submitted that the Mining Lease Sitapuram Limestone Mine (ML-1) was initially granted in favour of M/s Raasi Cement Ltd. vide Govt. order G.O. no. 141 Dated 07.03.1984. The same lease was transferred in favour of M/s Vishnu Cement Ltd. Vide Govt. Order no. 186 Dated 10.04.1985. M/s Vishnu Cement Ltd. Was merged with M/s Zuari Cement Ltd & the mining lease got transferred vide Govt. order 68 dated 09.07.2010 & Proceeding No. 651 7/M2/2002 dated 02.09.2010 of ADMG, A.P. The 1st renewal of ML granted vide GO No. 361 Dt. 19.12.2003 for the period of 20 years w.e.f. dated 24.04.2004. Presently, the validity of ML is till 23.04.2014. The Extension of validity of mining lease till Year 2034 is under process as submitted by PP in reference to ADMG letter no. 6517/M2/2002 Dt. 02.09.2010.

The Mining Lease Sitapuram Limestone Mine (ML-2) was initially granted in favour of M/s Vishnu Cement Ltd. vide Govt. order G.O. Ms no. 212 dated 15.06.1992. M/s Vishnu Cement Ltd. Was merged with Zuari Cement Ltd. & the mining lease got transferred vide Govt. order 68 dated 09.07.2010 & Proceeding No.

3616/M/2010 dated 02.09.2010 of ADMG Miryalaguda. The 1st renewal of ML granted vide GO No. 17 Dt. 07.03.2018 for the period of 50 years w.e.f Dt. 12.11.1992 and thus valid till 11.11.2042.

The PP submitted that Ministry has issued corrigendum in EC-1 & EC-2 vide Lr No. J-11015/63/2003-IA. II (II) dated 4.04.2006. The PP submitted that EC granted to M/s Vishnu Cement was transferred to M/s Zuari Cement Ltd vide Lr. No J-11015/63/2003-IA. II(I) dated 17.02.2011.

Based on the discussion held and document submitted by the PP the Committee has following observations:

- a) There are two separate mining lease ML-1 (lease area 777.09 Ha) for which EC was granted vide letter No J-11015/63/2003-IA. II(M) dated 9.05.2005 for production of 3.0 MTPA and ML-2 (lease area 558.94 Ha) for which EC was granted vide letter No. J-11015/174/2003-IA. II(M) dated 4.04.2006 for production of 0.03 MTPA.
- b) The EC for ML-1 (777.09 Ha) was granted on 09.05.2005 (for 3.0 MTPA) in the said EC letter there were two important specific conditions viz. "i) *The environmental clearance is granted to ML-1 only for lease area of 777.09 Ha and production capacity of 3.0 MTPA and ii) **The Company shall obtain separate mine plan approval and environmental clearance for ML-2 for mining limestone until such time production should cease from ML-2.***"
- c) The EC for ML-2 (558.94 Ha) was granted on 4.04.2006 (for 0.03 MTPA) in the said EC letter there was specific condition that the maximum combined production from both the mine leases (ML-1 :777.09 Ha and ML-2: 558.94 ha) shall not exceed 3.0 million tons per annum.
- d) The Ministry thereafter issued corrigendum Lr No. J-11015/63/2003-IA. II (II) dated 4.04.2006 wherein the special condition no 2) of EC granted for ML-1(777.09 Ha) on 9.05.2005 was changed to "*it shall be ensured that the maximum combined production from both the mining leases (ML-1 :777.09 Ha and ML-2: 558.94 ha) shall not exceed 3.0 million tons per annum.*"
- e) The Ministry vide Lr. No J-11015/63/2003-IA. II(I) dated 17.02.2011 transferred the above two EC granted to M/s Vishnu Cement in the name of M/s Zuari Cement Ltd.
- f) PP has applied in one application for both the mine leases (combined lease area - 1336.03 Ha) assuming two mining leases were amalgamated by virtue of MoEF&CC corrigendum letter dt. 04.04.2006. The committed observed that the available document suggests that the Ministry did not amalgamated the ECs but transferred the two ECs with single letter as the transferor and transferee are same for both the ECs. Thus, the submission made by PP during the meeting that ECs were amalgamated is not correct. Further, as there are

two separate mining lease and two separate ECs, the PP was required to apply separately for their regularization as per provision of Notification dated 6.04.2018.

7. The Committee finally **deferred** the proposal **and asked the Member Secretary to get the necessary inputs from IA**-Policy division of Ministry for taking view on ***whether fresh individual applications of both the leases can be processed by Ministry in-lieu of the present single application for both the lease mines***. The decision of the policy may be conveyed to the PP and PP should apply accordingly.

2.6 Expansion in Production Capacity from 9.10 MTPA to of 14.10 Million TPA of Limestone from Bhatkotari Limestone Mine, Located at – Bhatkotari Villages, Lasravan, Phalwa and Rasulpura, - Nimbahera Taluka, District-Chittorgarh, Rajasthan (MLA: 740.93ha) by M/s Wonder Cement Limited [Agenda No. 2.6; File No. J-11015/69/2018.IA; Proposal No. IA/RJ/MIN/8511/2012; [Consultant: Vimta Labs Limited] - Examination of EC.

The proposal of M/s Wonder Cement Limited is for enhancement of limestone production from 9.10 MTPA to 14.10 MTPA (14.53 Million TPA of ROM) from Bhatkotari Limestone Mine, Lease having mining lease area 740.93 Ha, located at – Bhatkotari Villages, Lasravan, Phalwa and Rasulpura, - Nimbahera Taluka, District-Chittorgarh, Rajasthan. The mine area is a part of the Survey of India Topo-sheet No. 45L/10, 45L/6, 45L/9 between coordinates Latitude From 24039'14.4" to 24040'27.67" N and Longitude From 74035'13.51" to 74037'46.16" E. The mine lease falls in seismic zone-II as per IS-1893 (Part- 1)-2002.

The project falls under Schedule 1(a) of mining and is a Category- "A" project as per EIA notification 14th September 2006 (as amended) as the mining lease is more than 100 Ha.

The PP vide proposal No IA/RJ/MIN/8511/2012 applied online for grant of ToR 12.06.2018 and submitted Form-1 and Pre-Feasibility Report. The proposal was considered in EAC meeting held on 19th July, 2018 wherein the Committee recommended for grant of ToR for Bhatkotari Limestone Mine with Proposed Production capacity of 14.10 Million TPA of limestone by M/s Wonder Cement Limited, Located at – Bhatkotari Villages, Lasravan, Phalwa and Rasulpura, - Nimbahera Taluka, District-Chittorgarh, Rajasthan (MLA: 743.93ha). The ToR was issued vide Lr. No. J-11015/69/2012.IA.II(M) dated 7th August, 2018.

The Project Proponent vide proposal No. IA/RJ/MIN/8511/2012 applied online for grant of EC on 19.04.2019 and submitted EIA/EMP Report after conducting public

hearing. Due to non-submission of complete information queries were raised by Ministry on 9.05.2019. The PP replied to queries on 17.05.2019 and the proposal is now placed in EAC meeting held on 27-28 June, 2019.

The PP reported that Govt. of Rajasthan vide letter no. F5(76)Khan/Gr.2/07 dt.23-8-2008 granted mine lease in 740.93 ha area. The lease deed executed on 8-9-2008 and registered on 9-9-2008 for 30 years from 9-9-2008 to 8-9-2038. The PP reported that mining lease validity was extended for a period of 50 years i.e. up to 08.09.2058 vides Govt.order.no.F5 (76)Khan/Gr.2/07 dated 30.06.2015.

Environmental Clearance for the said mine for capacity of 3.75 MTPA was granted by MoEF vide Letter No. J-11011/506/2007- IA II (I) dated 11th June, 2008. Operation of limestone mines commenced in April 2011. The PP then obtained EC for expansion of limestone production 3.75 to 9.10 MTPA vides Letter No. J-11015/319/2012- IA/II (M) dated 19-12-2013. The PP then obtained amendment in EC for intersection of ground water vides Letter No. J-11015/319/2012- IA/II (M) dated 30.06.2016.

The mining plan has been approved by Indian Bureau of Mines, Ajmer, vide letter no 682(23) (755)/10- MCCM (N)-Udai dated 20-7-2011. The Review of mining plan with progressive mining closure plan of 14.1 MTPA limestone has been approved by Indian Bureau of Mines vide letter No 584(4)(3)(1764)/2018 dated 19.12.2018.

The PP submitted that Mining operations are carried out by fully mechanized open cast method, utilizing Heavy Earth Moving Equipment (HEME). Blasting is carried out to create fragmented material. The lease area is predominantly outcropping with limestone and is practically devoid of any overburden except for small patches of shale. WCL Bhatkotari limestone mines is a fully mechanized opencast mine. Height of the bench is 10 m and the width of the benches varies from 20-25 m. The working is done by putting 115 mm dia DTH holes by ROC L-8 & IBH-10 drill machine & blasting by ANFO & booster charge with NONEL technology. The mechanized method will consist of the following operations. a) Cleaning the top surface by dozers. b) Drilling and blasting c) Excavation and loading by excavator and d) Haulage by dumpers up to crusher. Drilling is being carried out by using wet drill. Blasting is being done by using slurry explosives with nonel detonators. Hydraulic excavators are being used to load the blasted limestone into 55 Tonne dumpers and the same is transported to the crushing plant located at a distance of about 1.5 km. At present 2 nos. of 1400 TPH capacity limestone crushers are in operation and for the present expansion additional one no. 1400 TPH capacity crusher is proposed. The PP submitted that mineable reserves are estimated to be 436.7 million tonnes and balance reserve as on 1st April 2019 is 429.23 million tonnes and as per the planned production at the rate of 14.10 MTPA mining, life of the mine works out to be 29 years.

Observation of EAC: The Committee observed that PP did not provide the location of the proposed crusher.

The PP submitted that at the conceptual stage the area of pit/quarry will be 337.64 Ha, (Waste dump + Top Soil Stack + Mineral Stack + Infrastructure + sub-grade stock + crusher) will be 0 Ha, Roads 10 Ha, and area under plantation will 121.0 Ha (Plantation will be done 43.22 ha along 7.5m barrier & non mineralized zone, over upper two mined out bench 54.0 ha and back filled dump area 23.78 ha) + remaining land 272.28 Ha. PP submitted that at the conceptual stage of mining, the worked out pit will be converted into water reservoir. During the five year of Mining Plan period waste will be generated. There exists a thin layer of about 0.5-1.0-meter-thick top soil layer. This will be removed separately and simultaneously used for plantation. Only temporary storage for top soil is proposed. Presently waste generated is kept in waste dump site and in the conceptual stage, total waste (interburden + screen reject) will be about 20.25 million tonnes which will be used for back filled on 23.78 ha area within mined out pit.

Observation of EAC: The Committee observed that PP has proposed that at the end of mine life, total waste generation will be 20.25 Million tone which will be backfilled on 23.78 Ha area. But it appears that PP did not consider the impact of the same while predicting the air quality. It is necessary as the re-handling of the waste will have impact on the environment. Further PP did not provide details on commencement of backfilling. EAC is of the view that it should be in progression to mining activities so as to avoid re-handling of the waste and also land degradation due to storage of waste. Thus, PP needs to provide the total excavation plan for entire 29 years (year-wise) to enable the committee to understand the progression of mine over the years, for each year PP needs to submit the proposed backfilling plan if any, plantation plan, reclamation & rehabilitation plan so as to finalize the project specific conditions.

PP submitted that the ground water table during pre-monsoon season ranges from 0.35 m bgl to 29.66 m bgl (May 2016). During post monsoon (November 2016) varies from 0.25 m bgl to 27.21 m bgl. Groundwater will be used for drinking. Recycled water from ETP/STP will be used for sprinkling on haulage road for dust suppression. PP submitted that the mine working will intersect the ground water table. PP submitted that application regarding Groundwater clearance / NOC for dewatering of groundwater during mining has been submitted to CGWA, Rajasthan and is approved. PP submitted that total water requirement for Bhatkotari Limestone Mine is 63 KLD for proposed expansion project. Out of which 53 KLD is recycled water and balance is fresh water requirement. Source is Groundwater and will be used for drinking. Recycled water from ETP/STP will be used for sprinkling on haulage road for dust suppression. Total water requirement after proposed expansion of the project will be 175 KLD. Existing water demand is 112 KLD. Groundwater will be used for drinking.

Observation of EAC: - The PP has obtained amendment in EC vide letter No. J-11015/319/2012-IA II (M) (pt) dated 30.06.2016 wherein permission for intersection of Ground Water Table was granted. The PP has obtained permission from central Ground Water Authority for intersection of Ground Water Table vide letter dated

04.07.2008. The same has been renewed in 2011 and then vide letter no. 21-4(212) WR/CGWA/2007-1570 dated 09.10.2015 for intersection of Ground Water Table. This NOC was valid for 3 years i.e. up to 8.10.2018. The PP has applied for EC 17.05.2019 i.e. after the expiry of NOC but PP did not upload the renewed NOC if any. Thus, PP needs to provide copy of NOC obtained from CGWA from time to time and the copy of application made to CGWA for renewal and its current status. The Committee asked Ministry to examine the recent guidelines of CGWA and take necessary action for any violation in the instant case.

The PP submitted that during the initial 5 year period, Green belt/plantation is proposed over 5 Ha (1000 spalings/year/Ha). PP submitted that at the end of life of mining the area under plantation will be 121 ha. The entire area under plantation will be fenced with 2 meter high barbed wire fencing and entrance is restricted for the safety of plantation.

Observation of EAC: The Committee observed that in the Form-2 the PP has mentioned the density of tree plantation per ha (in no.) is 2500 and in the EIA Report as 1000 saplings/ha. These are not in agreement. Further, in Form-2, there is no plantation proposed beyond lease area, which was not acceptable to the committee. Thus, PP needs to provide the compliance of EC Condition with respect to plantation and implementation status and asked the Ministry to examine the same in light of already prescribed EC Conditions, and take appropriate measures before placing the proposal for the consideration of EAC. The committee opined that Ministry shall take appropriate action on the Consultant for not verifying the data before submission of application.

PP submitted that there is no Forest Land in the mining lease area and submitted a certificate issued by Forest Officer, Chittorgarh district vide letter S.No/Survey/2007-08/10402 dated 01.10.2007. PP submitted that there is no Wild Life Sanctuary or National Park or Biosphere within the study area of 10 km. Certificate in this regards stating "No National park, sanctuaries, Biosphere reserves, Wildlife corridors within 10km of Mining lease hold area" obtained from District Forest Officer, Jaipur, Rajasthan, vide letter No. S. No/Survey/2007-08/10402 dated 01.10.2007.

Observation of EAC: The KML file was examined on the DSS and observed that the mining lease area is not falling in forest land and is also not within 10 km from any protected area. However, however, the Certificate submitted by PP is not issued by the competent authority and PP should submit the certificate from competent authority.

The PP submitted that there are three schedule-1 species viz. peacock, Leopard and Indian wolf is present in the study area. The PP has submitted letter No 5521 dated 6.09.2013 issued by Addl. Chief Conservator of Forest & Chief Wildlife Warden thereby submitting the authenticated map and conservation plan to MoEF&CC.

Observation of EAC: The Committee observed that copy of conservation plan submitted online is not illegible. Due to this EDS was raised by the Ministry but PP

even in its reply to EDS, did not upload the complete documents. Further, the amount proposed for conservation plan, proof of deposition of the same in government account and activities carried out so far needs to be submitted.

PP reported that the baseline data on micrometeorology, Air, Water, Noise & Soil has been generated during pre-monsoon season (March, 2018 – May, 2018). The monitoring results of ambient air for SO₂, NO₂, PM₁₀ and PM_{2.5} are within the prescribed CPCB limits for "Industrial, Residential, Rural & other areas". Benzene and BaP were observed to be below detectable limits. All heavy metals specified in the NAAQs 2009 i.e., Ni, Pb and As were found to be BDL. In total, 15 water samples were collected from different sources around the project site within the periphery of 10 km. The water quality of ground water samples were found to be within the prescribed IS: 10500 norms. The surface and ground water quality is well within the limit except as G11 location wherein in the TDS value is above 2000 mg/l. The day time noise levels at all the locations ranged from 45.6 dB (A) to 70.7 with the maximum recorded at mine site (N1), and the minimum at Manji ka Goda (N5). The night time noise levels ranged from 42.2 dB (A) to 56.7, with the maximum value recorded at mine site (N1) and the minimum at Manji ka Goda (N5). The soil samples were collected at 15 locations and it has been observed that the texture of soil is mostly sandy clay and clay in the study area. The soil from the study area indicates that fertility is good due to their NPK content. The PP submitted that GLC value of PM is well within the range.

Observation of EAC: The Committee is of the view that PP needs to make a comparative analysis (2013 onwards) of various pollutants and also predict the possible future scenario. PP needs to provide the GLC values of all the pollutants in control case and worst case scenario. Controlling factor for the control case needs to be defined and how PP will achieve the same needs to be provided. The transportation of the mineral from mines to plant is through belt conveyor via stacker & reclaimer. The PP needs to ascertain the impact of stacker & reclaimer also. Impact of other mining leases and cement plant needs to be mentioned in detail. What is the specific diesel consumption from mines and how PP reduce the same in future? PP needs to provide the target for reduction of specific diesel consumption. PP should clearly bring out the impact of mining operation on air, water, noise and soil quality over the years. Whether PP has monitored the outcome of rainwater harvesting structure already constructed and is there any positive impact on the ground water level of the area. PP needs to provide the correct water balance cycle. PP needs to provide the alternative arrangement of water (other than ground water).

PP reported that there is no court case/ litigation pending against the project.

The public hearing for the proposed enhancement of limestone production from 9.10 MTPA to 14.10 MTPA was conducted by Rajasthan Pollution Control Board (RSPCB) on 14th February 2019, under the Chairmanship of Additional District Collector, Chittorgarh, near public place Surpur Balaji Temple, Rasulpura Village,

Nimbahera Tehsil, District Chittorgarh, Rajasthan, as per the Environmental Impact Assessment Notification dated 14th September, 2006. The advertisement for public hearing was published in '*Rajasthan Patrika Daily*' (09.01.2019) and '*Indian Express*' (09.01.2019). The Committee deliberated on the issues raised during the public hearing and the major issues raised by the local people were related to employment, noise pollution, air pollution, impact of blasting, health issues, development work for the villagers, not fulfilling the previous public hearing commitments, compensation to land owner which has previously given their land to company, advantage of skill development program, impact of mining on the nearby agricultural land particularly due to water holding capacity of the nearby fields, use of more amount of ground water for mining activities, decrease in crop production, implementation of mine closure plan, 'gaushala' needs to be constructed and issues related to job opportunities after skill development program etc.

Observation of EAC: The Committee observed that there are some important issues raised during public hearing and it is necessary that PP should submit i) the compliance of commitment made during the previous public hearing, ii) how many person lost their land and how many people have been granted with alternate job opportunities, ,iii) what is the outcome of the skill development program whether people are getting its benefits or not, iii) how many persons trained under skill development program got the employment opportunities, iv) whether company has monitored the crop productivity of the nearby area, if yes, details of the same needs to be provided, if no then PP needs to examine this issue and submit the details, v) whether decrease in crop production is due to water scarcity generated due to this project or due to deposition of fine dust particles, vi) PP should provide the details of dust deposition rate and its impact on crop productivity and area of influence, mitigative measure to be adopted and compensation to be paid. PP also needs to submit the noise quality data inside the mining lease area during operation and the outside area (which includes nearby villages, colony, school etc.). In addition to this, the issues raised during this public hearing need to be addressed properly, PP should provide its commitment, time line and budgetary provision of the activities to be undertaken.

The PP proposed a budget of 30 Lakh (Rs. 6.0 Lakh/annum) for activities proposed under CER. As per the CER policy dated 1st May, 2018, 1.0 % fund of the proposed project cost is to be allocated for the CER activities. The total cost of the proposal is Rs. 30.0 crores, for which the 1.0% CER cost amounts to Rs. 0.3 crores (30 lakhs). CER fund allocation of Rs. 30 Lakhs. This proposed amount will be spent on a) Supply of books and stationary to students of nearby villages for 0.6 lakh/annum for consecutive 5 years from 2019 to 2023 Under the Education sector b) Work as per requirement of community for 0.4 lakh/ annum for consecutive 5 years from 2019 to 2023 Under the Education sector. c) Creation of more SHG groups in surrounding villages for 0.7 lakh/annum for consecutive 5 years from 2019 to 2023 Under Women Empowerment d) Work as per requirement of community for 0.3 lakh/ annum for consecutive 5 years from 2019 to 2023 Under Women Empowerment. e) Construction of cattle water tank in villages for 0.5 lakh/annum for consecutive 5 years from 2019 to 2023 Under the Drinking Water. f) To provide support for recharge of tube wells in villages for 0.5 lakh/annum for consecutive 5 years from 2019 to

2023 Under the Drinking Water. g) Maintenance of drainage system in village streets for 0.8 lakh/annum for consecutive 5 years from 2019 to 2023 Under the Infrastructure. h) Installation of solar street lights in villages for 0.7 lakh/annum for consecutive 5 years from 2019 to 2023 Under the Infrastructure. i) Organize health camps in villages for 0.7 lakh/annum for consecutive 5 years from 2019 to 2023 Under the Health. j) Veterinary Check-up Camps in villages for 0.8 lakh/annum for consecutive 5 years from 2019 to 2023 Under the Health.

Observation of EAC: The Committee observed that in most of the activities, PP has mentioned that activities will be done as per the requirement of the community, which shows lack of obligatory commitments of the PP. The PP needs to design its CER program according to the needs of the villagers and local community. Thus, PP needs to carry out analysis of the needs of the local community both through the issues raised during PH and interaction with community residing in the nearby villages. Based on the need based analysis, CER activities and its associated should be prepared and submitted.

Certified Compliance report of Bhattkotari Limestone mine with enhancement of production capacity from (9.10 MTPA To 14.10 MTPA) at Villages- Bhatkotari, Lasravan, Phalwa and Rasulpura, Taluka- Nimbahera, District-Chittorgarh, Rajasthan with vide letter No IV/ENV/R/Mines/517/872/2014/607 dated 29.01.2019.

Observation of EAC: The Committee observed that no major deviation has been reported by the Regional Office but close examination with the help of KML on timeline of google map, suggest that some deviations in mining activity from the lease area. Committee recommended that a field visit to the site may be carried out for ground verification of the deviation and based on the finding, appropriate measures may be taken by ministry.

The PP has submitted that R & R Plan has already been implemented.

Observation of EAC: The Committee is of the view that PP should provide the complete details of the implementation of R&R plan.

19. The Project Proponent submitted that the budget earmarked for Environmental Management Plan (EMP) will be ₹ 300 lakh as a capital cost and ₹ 10 lakh as annual recurring cost. Which includes a) Pollution Control ₹ 100 Lakh (Capital Cost) and ₹ 5 lakh (Recurring Cost), b) Pollution Monitoring ₹ 10 lakh (Capital Cost) and ₹ 2 lakh (Recurring Cost), c) Occupational Health ₹ 20 Lakh (Capital Cost) and ₹ 1 lakh (Recurring Cost), d) Green Belt ₹ 20 Lakh (Capital Cost) and ₹ 1 lakh (Recurring Cost) and e) Others ₹ 150 Lakh (Capital Cost) and ₹ 1 lakh (Recurring Cost).

Observation of EAC: The PP need to provide the details on the human resource deployed in environmental management cell with assigned responsibilities and accountability for implementation of EMP. PP should also submit a fresh implementation framework for plantation with timeline based targets and associated budget provision for plantation as well as Environment Management Cell.

The PP submitted that the total budget for occupational health plan shall be Rs. 20 lakh Capital Cost with recurring annual cost is 1 Lakh. WCL has 10 beds well equipped air conditioned hospital cum occupational health Centre not only for taking care of needs of employees but for residents of surrounding villages since November 2014. This hospital is equipped with all modern medical instruments and equipment like X-Ray machine, ECG machine, glucometer, hospital beds, oxygen cylinders, air conditioners etc along with all necessary furniture and fixtures. All medicines and emergency medicines are available in Hospital. WCL has deployed one Senior Medical Officer, one physician, one gynecologist and one Physiotherapist (Visiting Doctor), four Male Staff Nurse, One X ray Technician and One Laboratory Technician. WCL hospital is also having an air conditioned ambulance van with all essential medicine available round the clock with St. John Ambulance Trained First Aid Certificate holder drivers for use of employees & workmen in case of need. Hospital is also carrying out the clinical laboratory investigation 30 nos.- (including X Ray, ECG, Audiometry Spirometry. Health Awareness programme & Free consultancy camp are being organize periodically. Pre / Periodical Medical Examination of Company and Contractor employees are being carried out regularly at Occupational Health Centre cum Hospital. Free weekly consultancy service with physiotherapist is being provided at fully equip Physiotherapy room. Blood donation camp is being organized every year and average 500 units of Blood are being collected and supplied to Blood bank of Govt. hospital, Nimbahera. WCL has also organized 6 First Aid training programme for 152 candidates.

The Project Proponent submitted that the total project cost shall be ₹ 30 Crore and shall give direct employment to 48 persons during operation and this project will also generate indirect employment to a considerable number of families. At present about 123 workers are engaged in the mining activities and for carrying out the proposed expansion, further employment will be provided to 48 people. Total manpower will be 171.

Based on the discussion held and document submitted the Committee recommended to **return the proposal in present form and asked the PP to submit the revised Form-2 and ensure that the application is linked properly with the file/proposal number of ToR of the present expansion proposal with following information/documents.**

- a) Documents uploaded on Parivesh should be legible
- b) PP needs to submit the compliance of the R&R activities previously proposed during the appraisal of the previous environmental clearance. The Committee observed that there are some important issues raised during public hearing and it necessary that PP should submit i) the compliance of commitment made during the previous public hearing, ii) how may person lost their land and how many people got the employment ,iii) what is the outcome of the skill development program whether people are getting its benefits or not, iii) how many persons trained under skill development program got the employment/alternate job opportunities, iv) whether company has monitored the crop productivity of the nearby area, if yes, details of the same needs to

be provided, if no then PP needs to examine the same and clearly bring out the decrease in water level in the nearby agricultural field , deposition of fine dust on the crop and it's level, decrease in crop production over the years. The study should be done by expert agency to clearly bring out the impact of mining and cement industry on the crop production and what is the area of influence. Based on the study report PP should plan the crop compensation plan as per area of influence. The study should clearly bring out the reason for loss of productivity whether it is due to water scarcity or due to deposition of fine dust etc., and v) PP should also plan for compensation to be paid to farmers for crop damage due to mining activity or cement manufacturing. PP should provide its commitment, time line and budgetary provision of the activities to be undertaken to address the issues raised during PH. The Committee is of the view that PP should provide the complete details of the implementation of R&R plan.

- c) PP needs to design its CER program according to the needs of the villagers and local community. PP needs to carry out analysis of the needs of the local community both through the issues raised during PH and interaction with community residing in the nearby villages and based on the need based analysis revise its CER budget and activities.
- d) PP needs to make a comparative analysis (2013 onwards) of various pollutants and also predict the possible further scenario. PP needs to provide the GLC values of all the pollutants in control case and worst case scenario. Controlling factor for the control case needs to be defined and how PP achieves the same. The transportation of the mineral from mines to plant is through belt conveyor via stacker & reclaimer. The PP needs to ascertain the impact of stacker & reclaimer also. The Committee observed that PP did not bring out the level of various pollutants considering the cumulative impact of the other cement and mining leases in the close vicinity of this project rather an isopleth is provided which is not illegible to understand the impact. Thus, PP needs to bring out the impact clearly. What is the specific diesel consumption from mines and how PP reduce the same in future? PP needs to provide the target for reduction of specific diesel consumption. PP should clearly bring out the impact of mining operation on air, water, noise and soil quality over the years. Whether PP has monitored the outcome of rainwater harvesting structure already constructed and is there any positive impact on the ground water level of the area. PP needs to provide the correct water balance cycle. PP needs to provide the alternative arrangement of water (other than ground water). Noise quality data inside the mining lease area during operation and outside area (which includes nearby villages, colony, school etc.) and level of reduction due to development of green belt needs to be submitted. The Committee also observed that there are villages in the close vicinity of the mining lease and impact of mining on the same needs to be ascertained and bring out specifically. The PP should also provide the location & frequency of air, water, noise and soil quality monitoring stations already established and to be placed post expansion. PP needs to provide the location of the proposed crusher to be installed.

- e) PP has obtained amendment in EC vide letter No. J-11015/319/2012-IA II (M) (pt) dated 30.06.2016 wherein permission for intersection of Ground Water Table was granted. The PP has obtained permission from central Ground Water Authority for intersection of Ground Water Table vide letter dated 04.07.2008. The same has been renewed in 2011 and then vide letter no. 21-4(212) WR/CGWA/2007-1570 dated 09.10.2015 for intersection of Ground Water Table. This NOC was valid for 3 years i.e. up to 8.10.2018. The PP has applied for EC 17.05.2019 i.e. after the expiry of NOC but PP did not upload the renewed NOC if any. Thus, PP needs to provide copy of NOC obtained from CGWA from time to time and the copy of application made to CGWA for renewal and its current status. The Committee asked Ministry to examine the recent guidelines of CGWA and take necessary action for any violation in the instant case.
- f) As per ground water scenario report Oct 2017 for Rajasthan shows that the Nimbahera comes under over exploited category and therefore, PP needs to submit alternative means to meet the water requirement for the project. Also mitigative measures, in case no alternative and reliable source is available.
- g) The Committee observed that PP has proposed that end of life total waste generation will be 20.25 Million tone which will be backfilled on 23.78 Ha area. But it appears that PP did not consider the impact of the same in the predicted impact on air quality as the re-handling of the waste will have impact on the environment. Further PP did not provide that when will be backfilling will start ideally it should be in progression to mining activities so as to avoid re-handling of the waste and also land degradation for storage of the waste. Thus, PP needs to provide the total excavation plan for entire 29 years (year-wise) to enable the committee to understand the progression of mine over the years, for each year PP needs to submit the proposed backfilling plan if any, plantation plan, reclamation & rehabilitation plan so as to finalize the project specific conditions. The Committee also observed that on viewing the KML file there is a stock maintained at east side of the mining lease boundary. It is not clear from where this material has come and whether the same is proposed in the approved mining plan. Thus, details of the same needs to be provided.
- h) The Committee also observed that lease boundary falls in various villages but there are two villages adjacent to lease boundary which has habitation. Thus, the PP needs to provide the protection provided to them in pursuant to Ministry's O.M No. Z-11013/57/2014-IA. II(M) dated 29.10.2014.
- i) The Committee observed that out of total mining lease area is 740.930 ha, with 31.096 ha is Govt. waste land, 41.253 ha is grazing land and 668.581 ha is private land. PP needs to provide supporting documents for change of land use from grazing land to industrial use (i.e. for mining). The detail for conversion of agricultural land for mining purpose needs to be submitted.

- j) The Committee observed that copy of conservation plan is not illegible online due to this EDS was raised by the Ministry but PP even in its reply to EDS did not upload the complete documents. Thus, same needs to be submitted along with details of amount proposed for conservation plan, proof of deposition of the same in government account and activities carried out so far.
- k) The Committee observed that in the Form-2 the PP has mentioned the density of tree plantation per ha (in no.) is 2500 and in the EIA Report as 1000 saplings/ha which is not in agreement. Further, there is no proposal for plantation beyond lease area. PP needs to revise its plantation target and include the area beyond mine lease and submit with associated budgetary provision and timeline to achieve the targets.
- l) The mine is operating under previous EC. The compliance status of previous EC is required to be submitted by PP with special emphasis on Plantation conditions. This shall be submitted at the earliest, preferably within 15 days to expedite the process of verification.
- m) The PP and consultant needs to give an undertaking the information provided in EIA/EMP report and documents submitted to Ministry are factually correct and they take ownership of the same. In the event of finding any misleading information at any stage the EC granted or to be granted may be cancelled.
- n) PP needs to submit an undertaking for compliance of Common Cause Judgment dated 2.08.2017 and other statutory requirement in pursuant to Ministry's O.M No. 3-50/2017-IA.III(Pt.) dated 30.05.2018.

2.7. Amtipani Chirodih Bauxite Mine (Area- 130.01 ha) with Production Capacity of 4.5 Lac TPA (ROM) of M/s. Minerals & Minerals Limited located at Villages: Amtipani, Chirodih & Bahagara, Taluka: Bishunpur, District: Gumla, Jharkhand. (File No: J-11015/31/2017-IA-II (M); Proposal No: IA/JH/MIN/63495/2017; Consultant: J. M. Enviro Net Pvt. Ltd.)- Consideration of EC.

The proposal of M/s Minerals & Minerals Limited for mining of bauxite with production capacity of 4.5 Lac TPA in the mine lease area of 130.01 ha. The mine lease area is located at Villages: Amtipani, Chirodih & Bahagara, Taluka: Bishunpur, District: Gumla, Jharkhand. The mine lease area is bounded between the latitude of 23° 20' 10.801" N to 23° 21' 25.361" N and the longitude of 84° 17' 6.782" E to 84° 17' 41.044" E. The Toposheet number of the study area is 73A/7 & 73A/3.

Project proponent (PP) submitted that the TOR was granted by Ministry vide letter No. J-11015/31/2017/IA-II dated 07.06.2017 for undertaking detailed EIA study. PP submitted the EIA/EMP Report to Ministry for seeking environmental clearance and the proposal has been considered in this EAC meeting.

PP submitted that the Department of Mines, Government of Jharkhand, Ranchi granted letter of intent to M/s. Minerals & Minerals Ltd. for 321.26 ha (Amtipani-41.10 ha; Chirodih-244 ha and Bahagara-36.16 ha) vide letter no. B.M.-4-1047/94 59/M, Ranchi dated 10.01.2017 for the period of 50 years and the same has been executed on 11.01.2017. However, the total mine lease area for the current project proposal is 130.01 ha (Amtipani-16.63 ha, Chirodih-98.75 ha and Bahagara-14.63 ha). Out of 130.01 ha, 123.59 ha is private agricultural land and 6.42 ha is Government waste/barren land.

PP submitted that no forest land involved in the mining lease area. PP further submitted that the Betla National Park, Palamau Wildlife Sanctuary and Mahuadanr Wolf sanctuary are existed within study area. In addition, the 22 protected forests and 07 reserved forests are existed within 10 km of the study area. The Committee asked the PP to obtain NBWL clearance. PP submitted the acknowledgment letter of application submitted for NBWL clearance. PP further submitted that the water bodies such as AmbakonaNala (~2.0 km in NW direction), DharahariNala (~4.0 km in NW direction), DhardhariNala (~4.5 km in South direction), NarmaNala (~5.5 km in NNE direction), ParasghariNala (~6.0 km in WSW direction), North Koel River (~6.5 km in East direction), BeltarlaNala (~7.0 km in SSE direction), PhuljharNala (~8.0 km in East direction), BetiNala (~8.5 km in NNE direction), DhobghatNala (~8.5 km in ENE direction) and SankhNala (~8.5 km in SSW direction) are existed within 10 km of the study area.

PP submitted the list of flora and fauna present in the impacted study area. Furthermore, as per the biological study report, 8 number of Schedule I species found within study area i.e. Wild Dog (*Cuon alpinus*), Wolf (*Canis lupus*), Asian Elephant (*Elephas maximus*), Sloth Bear (*Melursus ursinus*), Indian Pangolin (*Manis crassicaudata*), Indian Python (*Python molurus*), Monitor lizard (*Varanus monitor*) and Indian Pea Fowl (*Pavocristatus*), respectively. PP further submitted that the site specific conservation plan has been prepared for the project with budgetary allocation and the same has been approved by Principal Chief Conservator of Forests, Wildlife and Chief Wildlife Warden vide letter no 1015 dated 11.06.2018.

PP submitted that the modified mining plan with progressive mine closure plan in respect of AmtipaniChirodih Bauxite Mine over an area of 130.01 ha was approved by IBM vide letter RAN/GML/BX/MP-04/2017-18 dated 26.05.2017. PP further submitted that the public hearing was conducted on 22.07.2018 at Village- Banari, Bishunpur Block, District Gumla. Public hearing was chaired by Mr. Mustakeem Ansari,

Director Accounts Administration & Self Employment Programmes, District- Rural development agency, Gumla. PP presented the concerns raised during public hearing and corresponding corrective measures; the Committee deliberated the same.

PP submitted that the Mining Operations will be carried out by fully mechanized opencast method with Drilling and Blasting. The mining operation involves removal of topsoil which will be temporarily stacked in a non-mineralized area and same will be used for spreading over backfilled area for cultivation. PP further submitted that the bench height (in bauxite) will be maintained from 1.10 m to 3 m and ultimate bench width will be 6m in bauxite. Drilling will be carried out by wagon drill of 100 mm diameter and Non Electric Initiation System (NONEL) will be used to control the ground vibration, noise and fly rocks. Loading will be done by excavators. Transportation of Bauxite from working face to Richughuta/Tori/Lohardaga railway siding will be carried out by 9 Tonner Trucks, followed by the mineral will be transported to the captive plants situated at Renukoot in Sonbhadra District of U.P and Muri in Jharkhand.

PP submitted that the baseline study of the study area was conducted during Post Monsoon Season, i.e. October to December, 2017. PP submitted that the ambient air quality monitoring (AAQM) has been carried out at 7 locations for 24 hours (twice a week) for three months (26 observations for one location) and monitored the parameters such as SO₂, NO₂, PM₁₀ and PM_{2.5}. The result revealed that the concentrations of PM₁₀ and PM_{2.5} for all the 7 AAQM stations were found between 56 µg/m³ to 86.4 µg/m³ and 26.7 µg/m³ to 44.5 µg/m³, respectively. The concentrations of SO₂ and NO₂ were found to be in range of 6.5 µg/m³ to 13.3 µg/m³ and 8.6 µg/m³ to 18.6 µg/m³, respectively. In addition, the other parameters (i.e. O₃, Pb, CO, NH₃, C₆H₆, BaP, As and Ni) were monitored once in the study period, which reveals that other parameters values were found far below the prescribed standards. Noise level monitoring was carried out at 7 locations during the day and night time once in the study period. Noise levels varied from 42.5 to 54.8 Leq dB (A) during day time and from 39.2 to 43.5 Leq dB (A) during night time.

PP submitted that the ground and drinking water analysis for all the 6 sampling stations shows that pH varies from 7.12 to 7.62, total hardness varies from 40.80 mg/l to 88.43 mg/l mg/l and the total dissolved solids varies from 98 mg/l to 130.0 mg/l, chloride from 9.78 to 19.57 mg/l, sulphate varies from 6.64 to 8.44 mg/l and Fluoride from 0.08 to 0.15 mg/l, respectively. Soil samples were collected from 6 different specified locations within the study area of the mine site. The analysis results revealed that the soil is moderately acidic to slightly acidic in nature, the pH value ranges from 5.76 to 6.29, the soil texture is silty clay loam at all the sampling locations. The percentage of organic matter varies from 0.82 % to 1.07 %, the concentration of nitrogen is ranged from 148.04 kg/ha to 248.87 kg/ha and phosphorous found more than sufficient i.e. from 84.76 to 143.81 kg/ha, whereas

the Potassium is found to be ranging from 145.92 to 264.03 kg/ha, which is from less to medium in quantity.

PP submitted that the total Geological reserve is 2.45 million tonnes, the total mineable reserve is 1.93 million tonnes and the life of the mine is 7 years. PP further submitted that the total number of working days is 295 days/year; the number of shift per day is one. PP further submitted that total water requirement will be 30 KLD which will be obtained from rain water harvested in nearby mines as well as in mine sump.

PP submitted that the total cost of the project is 26.70 Crore, capital cost for EMP is 0.25 Crores with 0.05 Crores as recurring cost per annum and for CER 0.6675 Crores. PP further submitted that the no litigation against this proposal.

Based on the presentation made by PP and the discussion held, the Committee observed the following and **deferred the proposal and asked the PP to submit following information for further consideration.**

- (i). The public hearing was conducted 25 km away from the affected villages. Furthermore, public hearing was presided by Mr. Mustakeem Ansari, Director Accounts Administration & Self employment programmes, District- Rural development agency. However, as per the OM dated 28th September 2011, the public hearing should be headed by "the District Magistrate/ District Collector/Deputy Commissioner or his or her representative not below the rank of an Additional District Magistrate assisted by a representative of SPCB or UTPCC shall supervise and preside over the entire public hearing process. Therefore, the Committee suggested the Ministry that details of public hearing should be subjected to get the confirmation from the State Pollution Control Board.
- (ii). The responses prepared for public hearing issues are generic. PP needs to submit the revised responses with timeline for achieving/overcoming the issues and associated year wise budget details.
- (iii). The conservation plans for wildlife was found not satisfactory. PP is required to revise the wild life conservation plan with special emphasis on monitoring mechanism which are going to be implemented.
- (iv). PP submitted that the bauxite zone found within the matrix of Laterite, so, the PP proposed to carry out the mining of Laterite as well. Thus, the Committee asked the PP to submit the details of quantity of Laterite extraction as well as their impact on the environment. Furthermore, the details of total excavation and the usage of Laterite should also be included in the report. Furthermore, the mineralogical analysis for laterite mineral should be submitted from the IBM.

- (v). PP reported that no forest land in the mine lease area and submitted the letter from Circle Officer, Bishunpur. However, the Committee is of the view that Circle Officer not a responsible for providing the no forest land certificate. PP needs to submit certificate from the Competent Authority (PCCF and Chief Wildlife Warden) and the certificate should mention the name, designation, official seal of the person signing the certificate and letter number.
- (vi). PP submitted that the total lease area granted by the State Government is 321.26 ha, out of which 130.01 ha is the total mine lease area for this current proposal. PP needs to submit the land use details for complete lease area (321.26-130.01 = 191.25 ha).
- (vii). The environmental impact analysis on the total excavation is not properly addressed in the EIA report. PP needs to submit the details of total excavation and also redo the analysis.
- (viii). The funds allocated for CER is not as per the OM F. No. 22-65/2017-IA-III dated 01 May 2018. So, the EIA report needs to be revised in terms of the CER and EMP.
- (ix). PP submitted village road is passing through the mine lease area and mentioned that the road will be diverted and alternative routes will made for accessing by the village people. PP needs to submit the plans with budgetary provision and safety procedure for the alternative route.
- (x). PP mentioned that water required will be fulfilled from the nearby mines and the details are not provided, so the same needs to be provided.
- (xi). PP submitted that there will be significant cumulative effect on transport and infrastructure due to transportation of minerals, excavation and waste dumping from the mines in the region. The Committee asked the PP to submit the details of nearby mines using common transport infrastructure. PP also required to submit adequacy of transport infrastructure.
- (xii). PP submitted the land use pattern of the project area which are not matching with the claimed total mine lease area. PP needs to submit the clarification for the same.
- (xiii). PP submitted the flow chart of environmental management cell; however, the Committee noted that there is no individual person with assign responsibility for environmental monitoring and measurement. PP needs to submit the revised plans.

2.8. Nadidih Iron & Manganese Mine with enhancement in production of Iron ore from 2.88 MTPA to 6.0 MTPA and reduction in dry processing (crushing and screening) of low grade iron ore from old stack/dumps from 4.751 MTPA to 1.451 MTPA (Total handling 7.451 MTPA) by M/s Feegrade & Co. (P) Ltd

in the MLA 121.405 ha located at villages Nadikasira & Rengalbeda, Tehsil-Koira, District- Sundargarh, Odisha. (New File No: J-11015/249/2016-IA-II (M); New Proposal No: IA/OR/MIN/60756/2016; Old File No: J-11015/136/2012-IA.II(M); Old Proposal No: IA/OR/MIN/19312/2013; Consultant: Ecomen Laboratories Pvt. Ltd.)-Reconsideration of EC.

The proposal of M/s Feegrade & Co. Pvt. Ltd. for Nadidih Iron & Manganese Mine with enhancement in the production capacity of iron ore from 2.88 million TPA to 6.0 million TPA and reduction in dry processing (Crushing/Screening) of low grade iron ore from old stack/dumps from 4.571 million TPA to 1.451 million TPA (Total handling 7.451 million TPA) in the mine lease area of 121.405 ha. The mine lease area is located at Village –Nadikashira & Rengalbeda, Tehsil- Koira, District-Sundargarh, Odisha. The mine lease area is bounded by Latitude: 21° 58' 20.15" N – 21° 57' 23.35" N, Longitude: 85° 14' 58.34" E – 85° 15' 34.84" E in the Survey of India Toposheet no. 73 G/5 (F45N5).

PP submitted that the proposal of TOR was considered by the Expert Appraisal Committee in its meeting held during June 21-22, 2018 and the TOR was issued by the Ministry vide letter no. J-11015/249/2016-IA.II (M) dated 31st July 2018. PP submitted the EIA/EMP Report to Ministry for seeking environmental clearance.

PP submitted that the total mine lease area is 121.405 ha, which comprises of 89.87 ha of forest land and 31.535 ha of non-forest land. PP further submitted that the Stage-II Forest Clearance for an area of 39.309 ha has been accorded by MoEF&CC, Govt. of India vide letter no. 8 (21)26/2003-FCE, dated 16.03.2006. Further, the Stage-II Forest Clearance for 45.118 ha of additional forest & deemed (DLC) forest land for mining and allied activities (including 8.036 ha. of forest land for safety zone) has been accorded vide F. No. 8-68/2011-FC dated 30.10.2013 by MoEF&CC (Total forest area diverted = 39.309 + 45.118 = 84.427 ha). The PP has applied for surrender of remaining 5.443 ha forest land which is under process with State Government. PP further submitted that the NPV for total forest land was paid by PP to DFO, Bonai Division, Bonai, District-Sundargarh. PP reported that the mine is in operation since 1961. PP submitted that in pursuance to section 8-A (6) of MMDR Amendment Act, 2015, the mining lease period has been extended up to 31.03.2020 by execution of a Supplementary Lease Deed on 02.05.2015 over an area of 121.405 ha.

PP submitted that the mine was accorded Environmental Clearance by the Ministry vide letter no. J-11015/136/2012-IA.II (M) dated 10.04.2015 for 2.88 million TPA ROM and dry processing of 4.571 million TPA of low grade iron ore by reworking of old dumps thus total handling of 7.451 million TPA and installation of wet beneficiation plant of 1.142 million TPA capacity and production of 0.0036 million TPA of Manganese ore. Furthermore, PP submitted that the installation of wet

beneficiation plant of 1.142 million TPA capacity has been deleted through amendment of above mentioned EC by the Ministry vide letter no. J-11015/136/2012-IA.II (M) dated 09.11.2015 on the request of PP.

PP reported that the approval of modification of the Mining plan has been given by Indian Bureau of Mines, vide letter no. MPM/FM/24-ORI/BHU/2016-17/7405, dated 30.12.2016, is valid up to 31.3.2020 for the target production of 6.0 million TPA of ROM iron ore and reduction in dry processing (Crushing/Screening) of low grade iron ore from old stack/dumps from 4.571 million TPA to 1.451 million TPA (Total handling 7.451 million TPA). PP reported that the breakup of land use category at present is: Area excavated (42.7 ha), Over burden/ dump (20.394 ha), Mineral Storage (7.421 ha), Infrastructure (1.783 ha), Roads (5.246 ha), Green belt & Plantation (7.54 ha), Mineral processing plant (3.75 ha), Mine camp (1.522 ha), unutilized (25.606 ha) and non mineralized forest area applied for surrender (5.433 ha). The proposed land use shall be mining (58.613 ha), Overburden/Dumps: (27.889 ha), Mineral Storage: (7.421 ha.), Infrastructure: (2.137 ha), Roads: (4.246 ha), Green Belt & Plantation: (12.134 ha), Mineral processing Plant: (2.0 ha), Mine camp: (1.522 ha) and non mineralized forest area applied for surrender: (5.433 ha).

PP reported that the method of mining will be fully mechanized. The conventional opencast mining with mechanized drilling with 110 mm diameter drill machine, deep hole blasting, excavation by excavator of capacity up to 2.6 m³ bucket capacity and stacking by loader of capacity up to 1.2 m³. Excavator of capacity up to 1.6 m³/1.5 m³ will be used for feeding the crushing and screening units. ROM iron ore will be processed through dry crushing and screening units. To prevent generation of fugitive dust during transportation of ore through trucks/dumpers, static water sprinklers have been installed along the haul road within the mine for a length of 5.04 km. PP further submitted that water is also being sprinkled in dust prone areas through water tankers.

PP submitted that the total water requirement of the project after expansion will be 993.5 KLD (226 KLD ground water for drinking & domestic use and 767.5 KLD surface water for environmental maintenance). PP reported that presently PP has the permission from Dept. of Water Resources (DOWR), Govt. of Odisha for drawl of 520 KLD of surface water from Karo Nadi and 175 KLD of ground water (only for drinking and domestic use) to cater the present demand of the project. PP submitted that the CGWA granted the NOC for withdrawal of 226 m³/day of ground water vide letter no. 21-4(312)/SER/CGWA/2011-723 dated 05 May 2016. PP further submitted the renewal of NOC for ground water withdrawals vide NOC No: CGWA/NOC/MIN/ORIG/2019/4734 dated 04.02.2019.

PP reported that the mine is in operation since 1961. Presently the mine is in operation with due compliance of the Hon'ble Supreme Court Order dated 02.08.2017 in W.P.(C) No-114/2014. PP submitted the affidavit dated 13.06.2018 in compliance of Ministry's OM dated 30.05.2018 in respect of the order of Hon'ble of Supreme Court dated 02.8.2017 in W.P.(C) No. 114/2014. The details are as follows:

S. No.	Issue	PP's submission
1.	Compliance of Order dated 02.08.2017 in CWP no. 114/2014 of Hon'ble Supreme Court.	The DDM, Koira vide Memo No. 1552/Mines, dated 09.04.2018 has issued a certificate that presently the mine is working with all the valid statutory clearances and compliance of the Hon'ble Supreme Court Order dated 02.08.2017 in CWP no. 114/2014.
2.	Details of demand if any raised by Dept. of Mining and Geology, Govt. of Odisha.	(a) Demand note of Rs. 424,39,35,412 (Rupees Four hundred twenty four cores Thirty nine lakhs Thirty five thousands Four hundred twelve) was issued by Dept. of Mines, Govt. of Odisha vide letter no. 5056/Mines, dated 02.09.2017 toward compensation under Section 21 (5) of MMDR Act, 1957 for production without/in excess of the EC. (b) Demand note of Rs.28,98,723.89 (Rupees Twenty eight lakh Ninety eight thousand Seven hundred twenty four) was issued by Dept. of Mines, Govt. of Odisha, vide letter no. 5909/Mines, dated 24.10.2017 toward compensation under Section 21 (5) of MMDR Act, 1957 for production made without obtaining Forest Clearance under FC Act, 1980.
3.	Details of payment, if any made to Dept. of Mines and Geology, Govt. of Odisha.	(a) With regard to Demand No. 5056/Mines, dated 02.09.2017, the Proponent has made the payment of Rs. 424,39,35,412 (Rupees Four hundred twenty-four cores Thirty nine lakhs Thirty five thousands Four hundred twelve) vide e-challan reference ID: 27DDE0080D, Challan No. 8443/96, dated 27.12.2017 toward compensation under Section 21 (5) of MMDR Act, 1957 for production without/in excess of the EC. (b) With regard to Demand No. 5909/Mines, dated 24.10.2017, the Proponent has made the payment of Rs.28,98,723.89

		(Rupees Twenty eight lakh Ninety eight thousand Seven hundred twenty four) vide e-challan reference ID: 27DDEFAC07, Challan No. 8443/194, dated 29.12.2017 toward compensation under Section 21 (5) of MMDR Act, 1957 for production made without obtaining Forest Clearance under FC Act, 1980.
4.	Details of the past production of mines since its inception, duly authenticated by Dept. of Mines and Geology, Govt. of Odisha.	The details of past production of iron ore since 1980 which is duly authenticated by Deputy Director of Mines, Koira has been submitted by PP.

PP reported that there are two cases in this instant proposal. (i) 2(c) C. C 51/2013 has been filed in the court of SDJM, Bonai, Sundargarh for violation of Sec.15 of the Environment (Protection) Act, 1986. PP further submitted that the said case has been stayed on 28.01.2014 by the Hon'ble High Court of Orissa in CRLMP NO. 47/2014 in Misc. Case No. 25/2014.(ii) Revision Application bearing No. 22/ (67)/2012/RC-I has been filed by the lessee before the Mines Tribunal, Ministry of Mines, Govt. of India, New Delhi against the demand notice dated 20.10.2012 U/s 21(5) of the MMDR Act, 1957, which has been disposed of by the Mines Tribunal, Ministry of Mines, Govt. of India, New Delhi on 11.08.2017.

PP reported that there is no National Park, Wildlife Sanctuaries, Biosphere Reserve, Wildlife Corridor, Tiger/Elephant Reserve etc., within the 10km radius of mining lease area. The Mendhamaruni, Karo, Kathmal, Lakraghat, Karampada and Uliburu Reserve Forest are located within a radius of 10km from the core zone of the mine lease area. The Karoriver is flowing in the buffer zone adjacent to the mine along western boundary and Suna River is flowing at a distance of 5.3 km south east from the mine lease boundary. PP submitted the site specific wildlife conservation plan for 157 Lakhs from the office of the PCCF and Chief Wildlife Warden vide letter no.6644 dated 31.10.2009. PP further submitted that the list of Schedule I species such as Elephant, Sloth Bear & Godhi is included in the earlier approval letter dated 31.10.2009. However, the PP vide letter no. FEE/ED/GEO/2018-19/468 dated 01.02.2019 submitted that the Site Specific conservation plan for Schedule I species such as Indian Peafowl and Indian Rock Python is submitted to Divisional Forest Officer, Bonai, District-Sundargarh for approval and the same is under process.

PP reported that the baseline data have been carried out during summer season (March to May 2018). PP submitted that the ambient air quality data for PM10, PM2.5, SO₂ and NO₂ were studied at 8 locations. From the study it is seen that, in the ambient air, the PM10 values were in the range from 50.48 to 85.5

$\mu\text{g}/\text{m}^3$, PM_{2.5} values were in the range of 26.81 to 56.53 $\mu\text{g}/\text{m}^3$, SO₂ levels were ranging from 6.54 to 16.76 $\mu\text{g}/\text{m}^3$ and NO₂ levels were ranging from 10.41 to 24.17 $\mu\text{g}/\text{m}^3$.

PP submitted that the Public Hearing was conducted by State Pollution Control Board on 25.10.2018 at play ground near Nadidih Primary School of Village Nadikasira under Koira Tehsil of Sundargarh District. The Public Hearing was chaired by the ShriBhaskar Chandra Turuk, Additional District Magistrate, Sundargarh. About 500 participants had attended the public hearing and 172 persons have put their signature in the attendance sheet and 38 persons took part in the deliberation. In total, 8 written statements have been received from various stake holders. PP further submitted that the main issues raised during PH are peripheral development of the area, pollution control especially dust control, education/skill development, employment generation, drinking water facility, medical/ health facility and promotion of agriculture /plantation. PP has agreed to construct the bridge within 18 months after approval from Forest Department/competent authority for which Rs. 60/- lakhs will be spent, Rs 5/- lakh will be spent on provision of transformer in Koira stadium, employment of local people has already been given as per their eligibility, for providing further drinking water facility project proponent will spend Rs. 7.0 lakhs on this account. Capital cost already made on environment is Rs 7.61 crores & proposed to incur Rs 0.37 crores up to 31/3/2020. On peripheral development total expenses incurred during 2014-15 to 2017-18 is Rs 14.02 crores and proposed expenditure /annum Rs 0.7734 crores.

PP submitted that the MoEF&CC Regional Office Bhubaneswar, vide letter no.101-872/EPE/13, dated 18.06.2018, has submitted the certified compliance report of earlier EC no. J-11015/136/2012-IA. II(M), dated 10.04.2015. The Committee has deliberated the point wise compliance of Environmental Clearance. The report inter-alia mentioned that the project authority has complied or are in process of complying with the conditions stipulated by the Ministry. The PP was requested to submit action plan to increase greenbelt area by plantation more trees and cleaning of all rain water harvesting structure before and after monsoon. PP further submitted the updated compliance report from RO MoEF&CC, Bhubaneswar, vide letter no.101-872/EPE/1097 dated 26.06.2019 which mentioned that the PP is complied or are in process of complying the conditions stipulated by the Ministry.

It is informed to the Committee that the Ministry of Mines, vide Notification No.S.O.2817 (E) dated 22nd November, 2010 had appointed a Commission of Inquiry consisting Justice M.B. Shah, retired Judge of the Supreme Court of India, for the purpose of making an inquiry in to mining of iron ore and manganese ore in contravention of the provision of various Statues and the rules and regulations

issued there under, in various States including the State of Odisha. In view of Justice Shah Commission report (2013), the Ministry of Environment, Forest and Climate Change (MoEF&CC) has entrusted the work to CSIR-NEERI to conduct a Carrying Capacity Study with an objective to develop (i) a sustainable development plan for mining activities in the impact area of about 1000 sq.km., in the State of Odisha and (ii) an environmental management plan for current as well as future developmental scenario. CSIR-NEERI has conducted the study encompassing collection of primary data for various environmental components (viz. air, noise, water, soil/land, biological and socio-economic aspects), collection and analysis of environmental quality data by different mines in the region, modelling for transport scenario and infrastructure need assessment, and meetings/workshops with different stakeholders (like Department of Steel & Mines, Directorate of Mines, IBM-HQ & Regional Office, SPCB, GSI, MoEF&CC, State Forest Dept. etc. as well as senior executives from respective mines). NEERI has submitted the report along with the recommendations. PP has made the point-wise presentation w.r.t. the recommendations of CSIR-NEERI report on carrying capacity study may be included in the TOR condition w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha. There is a recommendation which needs to be implemented by the State Govt. and Project Proponent.

PP submitted that the estimated project cost is Rs.200 Crores. PP has earmarked Rs.37 Lakhs as capital cost for environment management plan, Rs.77.34 Lakhs for peripheral activities per annum and Rs.37.7 Lakhs per annum for environment management plan. PP further submitted that at present the direct employment is 346 numbers and this will increase to 426 numbers.

The proposal was considered in the EAC meeting held during January 22-23, 2019 and the Committee deferred the proposal and requested to submit the requisite information. PP submitted the information and the same examined, accordingly the proposal considered again in the EAC meeting held during March 25-26, 2019. The Committee asked the PP to present the response and the deliberated the response and deferred the proposal and asked to submit the requisite information such as valid accreditation certificate for consultant during the preparation of EIA report, updated compliance report from RO MoEF&CC, proof for surrender of 5.443 ha forest land, total excavation details, validation of air quality modeling and redo the air quality modeling with recent software, compare water and air quality data with NWMP data and NAAQM and resubmission of responses to queries asked in January 22-23, 2019 EAC meeting, etc. PP submitted the information and the same examined, accordingly the proposal was considered again in this meeting and presented reply and the Committee deliberated the same. PP further submitted the proposed scheme for dust control at source wherein the Committee deliberated on the reducing impact on nearby vegetation. During

deliberation, the PP agreed to suggestions of the Committee and accordingly has submitted the modifications.

PP presented that the as per the MMDR Act, 2015, the mine lease is valid till 31.03.2020 and the Committee deliberated on the life of mine in this context. After discussion, it was decided that the EC shall be valid as per the validity of the mine lease within the provision of MMDR Act, 2015 and accordingly the production shall be regulated on pro-rata basis from the compliance date of all applicable statutory requirements. The regulation on pro-rata production is in agreement with the methods adopted for imposing fine/penalty in Common Cause Judgment of Hon'ble Supreme Court.

Based on the presentation made by PP and the discussion held, the **Committee recommended the proposal for granting environmental clearance for enhancement in the production capacity of iron ore from 2.88 million TPA to 6.0 million TPA (pro-rata basis) and reduction in dry processing (Crushing/Screening) of low grade iron ore from old stack/dumps from 4.571 million TPA to 1.451 million TPA (Total handling 7.451 million TPA) along with the following specific conditions.**

- (i). **This EC will be valid up to 31.03.2020.**
- (ii). The enhance production shall be on pro-rata basis for the effective period of valid environment clearance granted herein. The PP shall ensure its compliance by getting concurrence in mining plan approved by concern authority in this regard.
- (iii). PP mentioned that the application for the surrender of forest area over 5.433 ha is submitted to State Govt. and the same has been accepted by the State Govt. Therefore, the lease area will be reduced to 115.962 ha (121.405-5.443 ha= 115.962 ha) and the mining activities will be restricted to 115.962 ha only.
- (iv). **This EC for expansion proposal (2.88 MTPA to 6.0 MTPA (pro-rata basis) and reduction in dry processing (crushing and screening) of low grade iron ore from old stack/dumps from 4.751 MTPA to 1.451 MTPA (Total handling 7.451 MTPA)) shall be operational after submission of an undertaking through affidavit to MoEF& CC within 15 days of receipt of this letter, for compliance of all the conditions prescribed herein.**
- (v). PP should adhere with the Site Specific Conservation Plan for Schedule I species as approved by the Competent Authority.
- (vi). PP shall spend Rs. 1.9 Crore as a CER cost within the validity period of EC.

The Committee has also deliberated the various specific recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha. There are recommendation which

needs to be implemented by the State Govt. of Odisha and Project Proponent. Based on detailed deliberations on the recommendations of the carrying capacity study report, the Committee has also **recommended the following specific conditions viz.**

- 1) Project Proponent and Department of Steel & Mines, Govt. of Odisha shall ensure the implementation of recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha.
- 2) Department of Steel & Mines, Govt. of Odisha should prepare 5 years regional plan for annual iron ore requirement from the state, which in turn shall be met from different mines/zones (e.g. Joda, Koira.) in the state. Accordingly, sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.
- 3) Project Proponent shall construct the cement concrete road from mine entrance and exit to the main road with proper drainage system and green belt development along the roads and also construction of road with minimum 300 m inside the mine. This should be done within one year for existing mines and new mine should have since beginning. The Department of Steel & Mines, Govt. of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has not constructed proper cement concrete road as suggested. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.
- 4) The Committee observed that as per the recommendations of NEERI report the PP needs to do regular vacuum cleaning of all mineral carrying roads aiming at "zero dust re-suspension" within 3 months. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.
- 5) Project Proponent shall monitor the environmental quality parameters as per EC and CTE/CTO conditions, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEF&CC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable Acts.
- 6) Project Proponent shall ensure the compliance of Suggested Ore Transport Mode (SOTM) with association of the State Government of Odisha. All existing

mines should ensure adoption of SOTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning itself, and should have system in place within next 5 years.

- 7) The State Govt. of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha. Progress on development of dust free roads, implementation of SOTM, increased use of existing rail network, development of additional railway network/conveyor belt/ pipelines etc. shall be submitted periodically to Regional office of the MoEF&CC.
- 8) Project Proponent shall develop the parking plazas for trucks with proper basic amenities/ facilities inside the mine. This should be done within one year for existing mines and new mines should have since beginning. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.
- 9) Department of Steel & Mines shall ensure the construction of NH 215 as minimum 4 lane road with proper drainage system and plantation and subsequent regular maintenance of the road as per IRC guidelines. Construction of other mineral carrying roads with proper width and drainage system along with road side plantation to be carried out. This shall be completed within 2 Years.
- 10) Regular vacuum cleaning of all mineral carrying roads aiming at "Zero Dust Re-suspension" shall be adopted by PWD / NHAI/ Mine Lease Holders within a time Period of 3 months for existing roads. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above mentioned specific condition.
- 11) In case the total requirement of iron ore exceeds the suggested limit for that year, permission for annual production by an individual mine may be decided depending on approved EC capacity (for total actual dispatch) and actual production rate of individual mine during last year or any other criteria set by the State Govt., i.e. Dept. of Steel & Mines. Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare in advance mine-wise annual production scenario so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual

production.

- 12) R&D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. R&D studies on utilization of mine wastewater having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept. of Steel & Mines, Individual Mine Lease Holders.
- 13) The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it will be desirable to develop proper rail network in the region. Rail transport shall not only be pollution free mode but also will be much economical option for iron ore transport. The rail network and/or conveyor belt system upto public railway siding needs to be created. The total length of the conveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11 mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length of rail network/ conveyor system for 8 mines (under SOTM 1 & 2) is estimated to be around 95 km. Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxy railway sidings in Koira region. Responsibility: Dept. of Steel & Mines, Govt. of Odisha and Concerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). The Department of Steel & Mines, Govt. of Odisha should follow-up with the concerned Departments and railways so that proposed proper rail network is in place by 2025.
- 14) State Govt. of Odisha shall make all efforts to ensure exhausting all the iron & manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept. of Steel & Mines, Govt. of Odisha.
- 15) Mining Operations/Process Related: Project Proponent shall implement the following mitigation measures: (i) Appropriate mining process and machinery (viz. right capacity, fuel efficient) should be selected to carry out various mining operations that generate minimal dust/air pollution, noise, wastewater and solid waste. e.g. drills should either be operated with dust extractors or equipped with water injection system. (ii) After commencement of mining operation, a

study should be conducted to assess and quantify emission load generation (in terms of air pollution, noise, waste water and solid waste) from each of the mining activity (including transportation) on annual basis. Efforts should be made to further eliminate/ minimize generation of air pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology. This shall be ensured by the respective mine lease holders. (iii) Various machineries/equipment selected (viz. dumpers, excavators, crushers, screen plants etc.) and transport means should have optimum fuel/power consumption, and their fuel/power consumption should be recorded on monthly basis. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommended time schedule and record should be maintained by the respective mine lease holders. (iv) Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in 3 years for monitoring land use pattern and mining activity taken place. Further, the extent of pit area excavated should also be demarcated based on remote sensing analysis. This should be done by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of national repute or if done by a private agency, the report shall be vetted/ authenticated by ORSAC, Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders. Responsibility: Individual Mine Lease Holders.

- 16) Air Environment Related: Project Proponent shall implement the following mitigation measures: (i) Fugitive dust emissions from all the sources should be controlled regularly on daily basis. Water spraying arrangement on haul roads, loading and unloading and at other transfer points should be provided and properly maintained. Further, it will be desirable to use water fogging system to minimize water consumption. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the CPCB in this regard. (ii) The core zone of mining activity should be monitored on daily basis. Minimum four ambient air quality monitoring stations should be established in the core zone for SPM, PM₁₀, PM_{2.5}, SO₂, NO_x and CO monitoring. Location of air quality monitoring stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board (based on Emission Load Assessment Study). The number of monitoring locations may be more for larger capacity mines and working in larger area. Out of four stations, one should be online monitoring station in the mines having more than 3 MTPA EC Capacity. (iii) Monitoring in buffer zone should be carried out by SPCB or through NABET accredited agency. In addition, air quality parameters (SPM, PM₁₀, PM_{2.5}, SO₂, NO_x and CO) shall be regularly monitored at locations of nearest human habitation including

schools and other public amenities located nearest to source of the dust generation as applicable. (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral. (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine (periodically, near truck entry and exit gate), Responsibility: Individual Mine Lease Holders and SPCB.

- 17) Noise and Vibration Related: Project Proponent shall implement the following mitigation measures: (i) Blasting operation should be carried out only during daytime. Controlled blasting such as Nonel, should be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. (ii) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs. (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the noise levels in the report. The data should be used to map the noise generation from different activities and efforts should be made to maintain the noise levels with the acceptable limits of CPCB (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored atleast once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.
- 18) Water/Wastewater Related: Project Proponent shall implement the following mitigation measures: (i) In general, the mining operations should be restricted to above ground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro- geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ outcome of such study may be reflected/incorporated in the EIA/EMP report of the mine appropriately. (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flow rate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas and river passing thorough the mine lease area (upstream and downstream locations) should be carried out on monthly basis. (iii) Regular

monitoring of ground water level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis. (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region. (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoff etc.) should be taken to prevent pollution of nearby river/other water bodies. Water quality monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted through NABL/ NABET approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable. (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage treatment plant should be installed for the employees/colony, wherever applicable. (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization. (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls. (xi) Trenches / garland drain should be constructed at the foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease areas and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis. (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water withdrawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.

19) Land/ Soil/ Overburden Related: Project Proponent shall implement the

following mitigation measures: (i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years or as per provisions mentioned in the mine plan/ scheme). The topsoil should be used for land reclamation and plantation appropriately. (ii) Fodder plots should be developed in the non-mineralised area in lieu of use of grazing land, if any. (iii) Over burden/ low grade ore should be stacked at earmarked dump site (s) only and should not be kept active for long period. The dump height should be decided on case to case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc. (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil, OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data. Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals. (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled area should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating. (vi) Hazardous waste such as, waste oil, lubricants, resin, and coal tar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease Holders.

- 20) Ecology/Biodiversity (Flora-Fauna) Related: Project Proponent shall implement the following mitigation measures: (i) All precautionary measures should be taken during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna should be prepared and implemented in consultation with the State Forest and Wildlife Department within the mine

lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department. (ii) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner. (iii) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species /grass species/scrubs etc., distance between the plants and survival rate should be recorded. (iv) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation. (v) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value. (vi) Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status, along with expenditure details. Responsibility: Individual Mine Lease Holders and State Forest & Wildlife Department.

- 21) Socio-Economic Related: Project Proponent shall implement the following mitigation measures: (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities. Further, basic amenities and infrastructure facilities like education, medical, roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region. (ii) Land outtees and land losers/affected people, if any, should be compensated and rehabilitated as per the national/state policy on Resettlement and Rehabilitation. (iii) The socio-economic development in the region should be focused and aligned with the guidelines/initiatives of Govt. of India/ NITI Aayog around prosperity, equality, justice, cleanliness, transparency, employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education, medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for "Samagra Vikas" of these

blocks well as other blocks of the district. While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by Ministry of Mines, Govt. of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.

- 22) Road Transport Related: Project Proponent shall implement the following mitigation measures: (i) All the mine lease holders should follow the suggested ore transport mode (SOTM), based on its EC capacity within next 5 years. (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the mine. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport. (iii) Transportation of ore should be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PM10 should be monitored near the roads towards entry & exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders and Dept. of Steel & Mines.
- 23) Occupational Health Related: Project Proponent shall implement the following mitigation measures: (i) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects periodically. (ii) Occupational health surveillance program for all the employees/workers (including casual workers) should be undertaken periodically (on annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately, if needed. (iii) Occupational health and safety measures related awareness programs including identification of work related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis. A full time qualified doctor should be engaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and record should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less) should be conducted followed by follow-up of actions, wherever required. Occupational health centre should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer).

2.9. Daitari Iron Ore Mining project of M/s. The Odisha Mining Corporation Limited over an area of 1812.99 ha located in Village Talapada, Teshil Harocjamdanppur&Sukinda, District Keonjhar& Jaipur,

Odisha.Permission for transportation of mineral by road from Daitari Iron Ore Mining Project beyond 31.03.2019. (File No: J-11015/1003/2007-I.A. II (M); Proposal No: IA/OR/MIN/7061/2007)-Consideration of Amendment in EC.

The proposal of M/s.The Odisha Mining Corporation Limited for requesting permission for transportation of mineral (1 MTPA) by road beyond 31.03.2019 from Daitari Iron Ore mine. The proposal was considered in this EAC meeting and based on the discussion held the Committee Deferred and referred the proposal to Ministry for taking appropriate directions and actions in this regard.

2.10: Mining of Limestone with production capacity 21000 TPA from Mining lease area 33.215 Ha located at Village Dostpur and Bhedanti Tehsil Narnaul, District - Mahendragarh, by M/s Gandhi Lime Traders. (File No: J-11015/58/2019-IA-II (M); Proposal No IA/HR/MIN/106909/2019; Consultant: Ind Tech House Consult, Delhi)-ToR Regarding.

The proposal of **M/s Gandhi Lime Traders** is for production of 21000 TPA of Limestone from Mining lease area 33.215 Ha located at Village Dostpur and Bhedanti Tehsil Narnaul, District - Mahendragarh. The mine lease area falls in the Survey of India Topo-Sheet No. H43K14 & H43L2.The latitudes and longitudes of the Mine lease fall between Latitude: - N 27° 50' 40.3" to N 27° 51' 15.3 " and Longitude: - E 76° 04' 54" to E 76° 05' 11.5".

The Project Proponent applied online on 31.05.2019 for grant of Term of Reference (ToR) and submitted the Form-1 and Pre-Feasibility Report.

As per EIA Notification dated 14th September, 2006 as amended from time to time, the project falls under Category "B", Project as the mining lease area is less than 100 Ha. PP in the Form-1 submitted that General Condition is not applicable but also mentioned that the mining lease falling near interstate boundary of Haryana/Rajasthan, at the distance of ~50 m in South direction.

Observation of EAC: As per EIA notification, 2006, "Any project or activity specified in Category 'B' is treated as Category 'A', if located in whole or in part within 5 km from the boundary of (i) Protected Areas notified under the Wild Life (Protection) Act, 1972, (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time, (iii) Notified Eco-sensitive areas, (iv) inter-State boundaries and international boundaries". In the instant case mine lease boundary lies at the distance of ~50 m of interstate boundary of Haryana/ Rajasthan, thus general condition will apply and project is considered as Category 'A' project.

The proponent mentioned that the application for the mining lease was made on 18.11.1983 and the state Government, after approval of the Central Government accorded sanction for the grant of "Letter of Intent" to M/s Gandhi Lime Traders

favor. The sanction of the state Govt. was conveyed to M/s Gandhi Lime Traders vide memo no. Glg/Hy/E-918/7761 on dated 22.07.1999 wherein PP was directed to submit the copy of approved mining plan within 6 months. On submission of the approved mining plan, the sanction for grant of mining lease was conveyed to M/s Gandhi Lime Traders vide memo dated 30.01.2003. However, M/s Gandhi Lime Traders failed to execute the lease deed on the plea that stamp duty was calculated on higher side. There was litigation between State Government and the PP and finally by State Govt. decided that M/s Gandhi Lime traders may execute the lease deed for mining of Lime Stone on the basis of average production 21000 T/annum approved by the Indian Bureau of Mines. M/s Gandhi Lime traders executed the lease deed in respect of area of 33.215 ha in village Dostpur & Bhedanti in district Mahendergarh for mining of Lime Stone as per the letter from Director, Mines & Geology, Haryana vide memo No. Glg/Hy/E-918/4508 on dated 8/8/2017 for a period of 50 yrs as per the provision of MMDR (A) Act, 2015. M/s Gandhi Lime Traders has submitted form K for execution and registration of mine lease deed on 07.12.2017 and Lease deed has been registered vide letter no. 1965 on dated 21.02.2018 by the District mining Officer, Mines & Geology Department Narnaul.

Observation of EAC: The Proposal was considered in EAC Meeting held on May 14th -15th, 2018. The Committee also deliberated on the proposal and documents submitted by PP and was of the view that as per section 10A (2) (c) MMDR, Act, 2015 *"where the Central Government has communicated previous approval as required under sub-section (1) of section 5 for grant of a mining lease, or if a letter of intent (by whatever name called) has been issued by the State Government to grant a mining lease, before the commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, the mining lease shall be granted subject to fulfilment of the conditions of the previous approval or of the letter of intent within a period of two years from the date of commencement of the said Act"* but in the instant case the lease was executed after 11.01.2017. The Committee was of the view that before considering the proposal clarification from the State Government needs to be obtained in this regard. The Committee therefore returned the proposal in the present form.

The Ministry has sought clarification from Department of Mine & Geology, Govt. of Haryana in this regard vide Letter No J-11015/48/2018-IA. II(M) dated 30.05.2018. The PP during the meeting submitted the letter No. 5/1/46-21B-II-94 dated 14.06.2019 issued by Additional Chief Secretary to Govt. of Haryana wherein it has inter-alia mentioned that *"The State Government noted that the provisions of Section 10A (2) distinguish certain cases. The present case was one where the mining lease was sanctioned prior to 12.01.2015 in the year 2003. It has been considered necessary to decide this issue i.e. as to whether M/s Gandhi Lime Traders became ineligible under Section 10A(i) or covered under Section 10A (2) of the MMDR, Act, 1957. The instant case was not a case where application for grant of mining lease was pending rather it as a case where sanction/ Lol for grant of Mining Lease had been issued after following the due process with the prior approval of the Central Government. Thus, the instant case was duly and squarely covered under Section 10A(2)(c) of the Amendment Act, 2015. The Central Tribunal issued directions to consider allowing the execution of lease deed to M/s Gandhi lime*

Traders on the basis of production as per the Indian Bureau of Mines approved mining plan.

The matter was referred to the Advocate General, Haryana for advice. who advised that lease be executed by charging Stamp Duty as per current rates taking annual production of 21000 MT as per the approved Mining Plan in compliance of directions issued by the central Government. He also advised to take undertaking from M/s Gandhi Lime Traders qua fulfilment of all conditions, if any of the previous approval of the Central Government and LoI within a reasonable time. It was again advised that all condition of the Central Government approval and LoI stands fulfilled and as such there is no such requirement to put any such condition. The only issue which remained to execute lease deed on Stamp Duty as per current rates. for which M/s Gandhi Lime Traders had already given undertaking. On this account condition be imposed that lease deed shall be executed on non-judicial stamp -papers calculated on the basis of current rate of royalty of Limestone and rates of Stamp Duty applicable for execution of lease deed for the period of 50 years (the period to be in accordance with provisions of Amendment, Act 2015). The Advocate General, Haryana further advised/ opined that a time bound schedule be imposed in the project proponent/ lessee to execute the lease deed.

It may also be considered that the above facts of the case reveals that the matter relating to sanction/ execution of lease remained under consideration of the State Government and the lease holder was not at fault for execution of lease deed. In the instant case the lease has been granted on application with prior approval of the Central Government and hence in this case the lease deed was required to be executed in Form K appended to the prevailing MCR 1960.

The PP submitted that Initial Mining Plan approved vide Indian Bureau of Mines vide LR No 614(2)/MP-8-124/99-DDN dated 20.01.2000. The Project proponent mentioned that the mining activity will be carried out by open cast mechanized method with drilling and blasting. The backhoe shall be used for extraction & loading of the mineral and transportation shall be carried out by deploying tippers. The PP submitted that for production of 21,000 TPA of limestone around 23,400 TPA O.B/Alluvium needs to be handled every year.

Observation of EAC: The PP in the pre-feasibility report in some places submitted that the entire mining lease lies within the Govt. Revenue Land. And in some places mentioned that it is private & Govt. revenue land, therefore the submission is found to be non-coherent. Committee observed that there are agricultural fields and houses in the mining lease area. There is a village adjacent to the mining lease boundary. Thus, PP needs to provide the land use with clarification on the use pattern along with supporting documents. PP needs to provide the details of the Project affected families and persons.

The PP mentioned that there is no surface water body within the mining lease area. Thus, there is no localized /concentrated contamination of water from the mining in area. The proposed working will be far above the general ground water table. No toxic minerals substances and tailing pond located in the area. Thus quality

of ground water will not pollute. The mining does not have any impact on topography and natural drainage of surrounding area. Total Water Requirement is 40 KLD (Domestic purpose, Dust Suppression and Plantation - 5 KLD, 20 KLD and 15 KLD respectively) and the water will be sourced from the nearby vendors of settlements. The PP during the meeting submitted that Krishnawati River/Kasaunti River is adjacent to mine site.

The PP submitted that the green belt shall be developed as per approved eco-friendly mine lease plan and as per CPCB guidelines. The project proponent shall also develop greenbelt in the premises of the schools, hospitals and also carry out the avenue plantation in the vacant areas along roads. The greenbelt shall be developed by planting saplings per year. Indigenous species with the consultation of the State Forest Department shall be planted and maintained.

PP submitted that there is no Forest Land in the mining lease area. The PP submitted that there is no national park, wildlife sanctuary and biosphere reserve within 10 Km study area.

PP in the Form-1 reported that there is a court case/ litigation pending against the project vide CWP No. 6366 of 2019. PP also submitted order dated 1.04.2019 of Hon'ble High Court of Punjab & Haryana in the CWP No. 6366 of 2019 which was disposed of by the Hon'ble Court with direction to State Government.

The PP in PFR mentioned that there is no human settlement within the mine contract area. No human settlement will be disturbed due to the mining activity. So, no Rehabilitation and resettlement plan is proposed. The PP in its presentation mentioned that R&R Plan or compensation details for the project affected people will be furnished.

Observation of EAC: The Committee after viewing the KML file observed that there are houses inside the mining lease area. Further, the information submitted by the PP is non-coherent. Thus, PP needs to justify this with supporting documents and provide the details whether the houses inside the mining lease is on the land owned by the land owners or it's an encroachment of Government land.

The Project Proponent submitted that the budget earmarked for Environmental Management Plan (EMP) will be 4% of total project cost i.e. Rs. 8.00 Lakhs. This amount will be used for dust suppression, Haul road maintenance and monitoring etc.

Observation of EAC: The Committee is of the view that EMP cost can only be decided after considering the impact of mining activities based on the baseline data to be collected by the PP for EC appraisal.

The Project Proponent submitted that the total project cost shall be ₹ Rs.2 Crore and around 54 workers will be employed directly in the proposed mining project. Transportation is required. Hence jobs and business opportunities will come up.

Observation of EAC: The Committee observed that PP in the documents submitted to the ministry mentioned that 11 persons will be employed and somewhere shows that 54 persons will be engaged. Thus, PP needs to ascertain the number of manpower engaged for the project including manpower to be engaged for the implementation of EMP.

Based on the discussion held and documents submitted the Committee **Return the project in the present form** and is of the view that PP and consultant should ensure that documents submitted to the Ministry should be factually correct failing which the proposal will be rejected. Accordingly, the Committee suggested that Ministry may take suitable action against consultant. The Committee is also of the view that PP should apply afresh with proper documentation along with following details:

- a) Draft mining plan for the project as the mining plan already approved is very old and based on the same it would be difficult to ascertain the further scoping of the project. The draft mining plan should be prepared considering the safety measures to be taken in pursuant to Ministry's O.M. No. Z-11013/57/2014-IA. II(M) dated 29.10.2014. The draft Mining plan should also address the protection to be provided for village road, nearby mining leases, and river.
- b) The general condition is applicable to the project thus PP should ensure to fill the form-1 correctly.
- c) The PP in the pre-feasibility report in some places submitted that the entire mining lease lies within the Govt. Revenue Land and in some places mentioned that it is private & Govt. revenue land which is contradicting. The Committee after viewing the KML file observed that there are houses and agricultural fields in the mining lease area. There is a village adjacent to the mining lease boundary. There are other mining leases adjacent to mining lease. Thus, PP needs to provide the clarification in this regard with supporting documents which also include the classification of land, ownership as per land records etc. In addition to this, PP needs to provide the details of the Project affected families and persons and details of R&R Plan. PP should ensure that PFR should be prepared strictly in accordance with guideline issued by the Ministry in this regard.

The meeting ended with thanks

Standard Terms of Reference (TOR) for Mining Project

- 1) The TOR will not be operational till such time the Project Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors..
- 2) Department of Mining & Geology, State Government shall ensure that mining operation shall not commence till the entire compensation levied, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.
- 3) Year-wise production details since 1993-94 should be given, clearly stating the highest production achieved in any one year prior to 1993-94. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994. The production details need to submit since inception of mine duly authenticated by Department of Mines & Geology, State Government.
- 4) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 5) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- 6) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- 7) Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- 8) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- 9) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating

process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the proposed safeguard measures in each case should also be provided.

- 10) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- 11) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 12) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 13) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 14) A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- 15) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- 16) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 17) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- 18) A study shall be got done to ascertain the impact of the Mining Project on

wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

- 19) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- 20) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 21) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.
- 22) Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 23) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed

in the Report.

- 24) One season (non-monsoon) [i.e. March - May (Summer Season); October - December (post monsoon season); December - February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM₁₀, particularly for free silica, should be given.
- 25) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 26) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 27) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 28) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 29) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- 30) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- 31) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be.

- 32) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.
- 33) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- 34) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- 35) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 36) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- 37) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 38) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 39) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 40) Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health

- impacts besides other impacts specific to the proposed Project.
- 41) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
 - 42) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
 - 43) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
 - 44) A Disaster Management Plan shall be prepared and included in the EIA/EMP Report.
 - 45) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
 - 46) The activities and budget earmarked for Corporate Environmental Responsibility (CER) shall be as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 and the action plan on the activities proposed under CER shall be submitted at the time of appraisal of the project included in the EIA/EMP Report.
 - 47) The Action Plan on the compliance of the recommendations of the CAG as per Ministry's Circular No. J-11013/71/2016-IA.I (M), dated 25.10.2017 needs to be submitted at the time of appraisal of the project and included in the EIA/EMP Report.
 - 48) Compliance of the Ministry's Office Memorandum No. F: 3-50/2017-IA.III (Pt.), dated 30.05.2018 on the judgment of Hon'ble Supreme Court, dated the 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India needs to be submitted and included in the EIA/EMP Report.
 - 49) Besides the above, the below mentioned general points are also to be followed: -
 - a) All documents to be properly referenced with index and continuous page numbering.
 - b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
 - d) Where the documents provided are in a language other than English, an English translation should be provided.

- e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
- f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
- g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- h) As per the circular no. J-11011/618/2010-IA. II (I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) Sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

Annexure-II

Recommendation of CSIR-NEERI Report on “Carrying Capacity Study for Environmentally Sustainable Iron and Manganese Ore Mining Activity in Keonjhar, Sundargarh and Mayurbhanj districts of Odisha State”

- 1) Department of Steel & Mines, Govt. of Odisha should prepare 5 years regional plan for annual iron ore requirement from the state, which in turn shall be met from different mines/zones (e.g. Joda, Koira.) in the state. Accordingly, sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.
- 2) The expansion or opening of new manganese ore mines may be considered only when the actual production of about 80% is achieved. Further, the mines that have not produced Mn ore for last two years and have no commitment in the current year as well; EC capacity in such cases may be reviewed. The Department of Steel & Mines, Govt. of Odisha shall submit the Annual Report on this issue to the MoEF&CC for further necessary action.
- 3) Analysis of baseline environmental quality data for the year 2014 and 2016 indicates that existing mining activities appear to have little / no potential impact on environmental quality, except on air environment, which was mainly due to re-suspension of road dust. Therefore, all the working mines can continue to operate with strict compliance to monitoring of environmental quality parameters as per EC and CTE/CTO conditions of the respective mine, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEF&CC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable acts.
- 4) Considering the existing environmental quality, EC capacity, production rate, iron ore resources availability and transport infrastructure availability, the share of Joda and Koira sector works out to be 70% and 30% respectively for the existing scenario for the year 2015-16. However, for additional EC capacity, it can be 50:50 subject to commensurate infrastructure improvement (viz. SOTM, pollution free road transport, enhancement of rail network etc.) in the respective regions.
- 5) Continuous monitoring of different environmental quality parameters as per EC and CTE/CTO conditions with respect to air, noise, water (surface & ground water) and soil quality in each region shall be done. The environmental quality parameters should not indicate any adverse impact on the environment. Monitoring within the mines should be done by individual mine lease holders, whereas outside the mine lease area, monitoring should be done by the Govt. of Odisha through various concerned departments/ authorized agencies. Various monitoring/ studies should be conducted through national reputed institutes, NABET/ MoEF&CC accredited laboratories/organizations. The reports submitted by individual mine lease holders and study reports prepared by other concerned departments/agency for each of the regions should be evaluated and examined by SPCB/ MoEF&CC.
- 6) Construction of cement concrete road from mine entrance and exit to the main road with proper drainage system and green belt development along the roads and also construction of road minimum 300 m inside the mine should be done. This should be done within one year for existing mines and new mine should have since beginning. The concerned departments should extend full support; wherever the land does not belong to the respective mine lease holders. The Department of Steel & Mines, Govt. of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has not constructed proper cement concrete road as suggested above.
- 7) In view of high dust pollution and noise generation due to road transport, it is proposed to regulate/guide the movement of iron and manganese ore material based on the EC capacity of the

mines. Accordingly, ore transport mode has been suggested, as given below in Table.

Table : EC Capacity based Suggested Ore Transport Mode (SOTM)

Code	EC	Suggested Ore Transport Mode
SOTM 1	≥ 5 MTPA	100% by private railway siding or conveyor belt up to public railway siding or pipeline for captive mines and 70% for non-captive mines
SOTM 2	Between 3 and <5 MTPA	Minimum 70% by public railway siding, through conveyor belt and maximum 30% by road - direct to destination or other public railway siding or above option
SOTM 3	Between 1 and < 3 MTPA	Minimum 70% by public railway siding and maximum 30% by road - direct to destination or by other public railway siding or above options
SOTM 4	<1 MTPA	100 % by 10/17 Ton Trucks or above options

It is mentioned by State Govt. of Odisha that currently about 45% of the iron ore is despatched using rail network and progressively it will be increased to about 60% by rail/slurry over a period of 5 years, taking into account time required to set up more railway sidings.

In view of present ore transport practices and practical limitations, all the existing mines should ensure adoption of SOTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning itself, and should have system in place within next 5 years.

However, the State Govt. of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha.

Transportation of iron & manganese ore through river (jetty) to nearest Sea port (Sea cargo option) may be explored or connecting Sea ports with Railway network from the mines to be improved further so that burden on existing road and rail network and also pollution thereof can be minimized.

Progress on development of dust free roads, implementation of SOTM, increased use of existing rail network, development of additional railway network/conveyor belt/ pipelines etc. shall be submitted periodically to MoEF&CC.

Responsibility: Department of Steel & Mines, Govt. of Odisha; Time Period: 5 Years for developing railway/ conveyor belt facilities

- 8) Development of parking plazas for trucks with proper basic amenities/ facilities should be done inside mine. This should be done within one year for existing mines and new mines should have

since beginning. Small capacity mines (in terms of lease area or production) not having enough space within the mine lease areas should develop parking plaza at a common place within the region with requisite facilities. Responsibility: Individual Mine Lease Holders; Time Period: 1 Year

- 9) Construction of NH 215 as minimum 4 lane road with proper drainage system and plantation and subsequent regular maintenance of the road as per IRC guidelines. Construction of other mineral carrying roads with proper width and drainage system along with road side plantation to be carried out. Responsibility: Department of Steel & Mines with PWD / NHAI Time Period: 2 Years.
- 10) Regular vacuum cleaning of all mineral carrying roads aiming at “Zero Dust Re- suspension” may be considered. Responsibility: PWD / NHAI/ Mine Lease Holders; Time Period: 3 months for existing roads.
- 11) Expansion of existing mines and new mines should be considered after conducting recent EIA Study (as per the provisions of EIA Notification 2006, as amended time to time) with proper justification on demand scenario for iron ore requirement and availability of pollution free transport network in the region. Responsibility: IBM, Department of Steel & Mines and MoEF&CC, New Delhi.
- 12) **Mine-wise Allocation of Annual Production:** In case the total requirement of iron ore exceeds the suggested limit for that year, permission for annual production by an individual mine may be decided depending on approved EC capacity (for total actual dispatch) and actual production rate of individual mine during last year or any other criteria set by the State Govt., i.e. Dept. of Steel & Mines. Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare in advance mine-wise annual production scenario as suggested in Table, so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.

Table: Allocation of Production to Different Mines for 5 Years (as per approved Mining Plan)

Mine Lease	EC Capacity (MTPA)	Suggested Annual Production (MT)				
		2016-17	2017-18	2018-19	2019-20	2020-21
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Mine 1	X1					
Mine 2	X2					
Mine 3	X3					
Mine n	Xn					
Total	160 +	105	129	153	177	201
<u>Next year allocation = Average of EC Capacity and Last year production</u>						

- 13) **Expansion of Existing Mines having Validity up to 2020:** In view of implementation of MMDR Act 2015, wherein many non-captive mines are expected to be closed by March 2020, total iron ore production scenario has been. It is expected that the non-captive mines having validity till 2020 shall try to maximize their production (limited to EC capacity) in the remaining period. Further, depending upon availability of iron ore resources, these mines may also seek expansion of EC capacity. It may be noted here that total EC capacity of existing 25 working mines having validity upto 2020 is about 85 MTPA, whereas actual production from these mines has been only 44.677 MT (52.6%) during 2015-16 and 57.07 MT (67.1%) during 2016-17. Also, it is expected that these mines would not even be able to achieve ore production as per existing EC capacity till March 2020. Therefore, these existing mines should go for production to the fullest extent to meet the requisite demand from the State. However, where EC limit is exhausted, application for expansion may be considered. Further, the EC process (i.e. Grant of TOR, Baseline data collection, Mining plan/ scheme approval, Public hearing,

preparation of EIA/EMP Report. Appraisal by the EAC and grant of EC) takes about one year time. Under such circumstances, it is suggested that further applications for grant of TOR or grant of EC for expansion of production capacity of the mine should be considered for those existing mines, which have exhausted their capacity subject to consideration of all environmental aspects. Responsibility: Department of Steel & Mines and MoEF&CC, New Delhi.

- 14) **Sustained Iron Ore Production beyond 2020:** Considering the implementation of MMDR Act 2015, total production of iron ore in Odisha State is anticipated to be about 111 MT during 2016-17 (actual production was – 102.663 MT), 136 MT during 2017-18, 146 MT during 2018-19 and 146 MT during 2019-20. Then there will be substantial drop in total production (to the tune of 73 MT during 2020-21 onwards) due to closure of mines, which are valid up to 2020. Therefore, in order to maintain operation/sustained growth of downstream industries, iron ore mining in the region needs to be continued at a sustainable rate. The State Govt. through Department of Steel and Mines should initiate appropriate action to ensure continued availability of iron ore from the region, as per suggested sustainable annual production
- 15) **Reserves Estimation–Mining Plan and Exploration:** Appropriate actions (geo-technical investigation for qualitative and quantitative resource estimation & other preparations for auction of mines), may be initiated taken into account the existing working mines, and the mines which were operational at some point of time (but closed presently due to various reasons). The total iron ore reserves/resources available within the total lease area of each mine should be estimated by State Govt./NMET/ GSI (or any other approved agency) with respect to: (i) Total lease area of mine (surface), (ii) Maximum depth to which resources could be available, (iii) Resources below the ground water table (if intersected), (iv) Reserves are to be estimated as per UNFC code with respect to quantity and quality (% Fe content), (v) Maximum mining rate and area for auction (after 2020) will be calculated based on total resources available and proposed life of mine leading to closure of mine in a stipulated time period.
Responsibility: Department of Steel & Mines, IBM and GSI; Time frame: 1 year for the mines to be auctioned for next 2 years. The above mentioned organizations shall ensure the compliance with respect to timelines for implementations.
- 16) Depending upon availability of extractable iron ore resources within a mine, mining below the ground water table may be permitted after conducting necessary geological and hydro-geological study by GSI and requisite approval from the CGWB/CGWA (Central Ground Water Board/Authority). This can be explored at least in few mines on trial/pilot basis. Further, within a mine, it will be desirable to operate one pit at a time, and next pit should be opened after extracting maximum possible resources from the first pit, so that the exhausted pit can be used for back filling/ storing of low grade iron ore. However, depending upon the quantity and/or quality of iron/ manganese ore, other mine pits in the same mine lease may also be opened for sustainable scientific mining, as per approved mining plan/scheme of mining by IBM. The Department of Steel & Mines, Govt. of Odisha should initiate the pilot project so that minerals are fully utilized.
- 17) **Commercial Utilization of Low Grade Ore:** R&D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. R&D studies on utilization of mine wastewater having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should also be explored. Responsibility: IBM, Dept. of Steel & Mines, Individual Mine Lease Holders
- 18) The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it

will be desirable to develop proper rail network in the region. Rail transport shall not only be pollution free mode but also will be much economical option for iron ore transport. The rail network and/or conveyor belt system upto public railway siding needs to be created. The total length of the conveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11 mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length of rail network/ conveyor system for 8 mines (under SOTM 1 & 2) is estimated to be around 95 km. Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxy railway sidings in Koira region. Responsibility: Dept. of Steel & Mines, Govt. of Odisha and Concerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). The Department of Steel & Mines, Govt. of Odisha should follow-up with the concerned Departments and railways so that proposed proper rail network is in place by 2025.

- 19) State Govt. of Odisha shall make all efforts to ensure exhausting all the iron & manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept. of Steel & Mines, Govt. of Odisha.
- 20) Large and medium mine leases contribute to better implementation of reclamation and rehabilitation plans to sustain the ecology for scientific and sustainable mining. The small leases do not possess scientific capability of environmentally sustainable mining. Therefore, new mine leases having more than 50 ha area should be encouraged, as far as possible. This will ensure inter-generational resource availability to some extent. Responsibility: Dept. of Steel & Mines, Govt. of Odisha.
- 21) **Mining Operations/Process Related:** (i) Appropriate mining process and machinery (viz. right capacity, fuel efficient) should be selected to carry out various mining operations that generate minimal dust/air pollution, noise, wastewater and solid waste. e.g. drills should either be operated with dust extractors or equipped with water injection system. (ii) After commencement of mining operation, a study should be conducted to assess and quantify emission load generation (in terms of air pollution, noise, waste water and solid waste) from each of the mining activity (including transportation) on annual basis. Efforts should be made to further eliminate/ minimize generation of air pollution/dust, noise, wastewater, solid waste generation in successive years through use of better technology. This shall be ensured by the respective mine lease holders. (iii) Various machineries/equipment selected (viz. dumpers, excavators, crushers, screen plants etc.) and transport means should have optimum fuel/power consumption, and their fuel/power consumption should be recorded on monthly basis. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommended time schedule and record should be maintained by the respective mine lease holders. (iv) Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in 3 years for monitoring land use pattern and mining activity taken place. Further, the extent of pit area excavated should also be demarcated based on remote sensing analysis. This should be done by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of national repute or if done by a private agency, the report shall be vetted/ authenticated by ORSAC, Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders. Responsibility: Individual Mine Lease Holders.
- 22) **Air Environment Related:** (i) Fugitive dust emissions from all the sources should be controlled regularly on daily basis. Water spraying arrangement on haul roads, loading and unloading and at other transfer points should be provided and properly maintained. Further, it will be desirable to use water fogging system to minimize water consumption. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the CPCB in this regard. (ii) The core zone of mining activity should be monitored on daily basis. Minimum four ambient air quality monitoring stations should be established in the core zone for SPM, PM₁₀, PM_{2.5}, SO₂, NO_x and CO monitoring.

Location of air quality monitoring stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board (based on Emission Load Assessment Study). The number of monitoring locations may be more for larger capacity mines and working in larger area. Out of four stations, one should be online monitoring station in the mines having more than 3 MTPA EC Capacity. (iii) Monitoring in buffer zone should be carried out by SPCB or through NABET accredited agency. In addition, air quality parameters (SPM, PM₁₀, PM_{2.5}, SO₂, NO_x and CO) shall be regularly monitored at locations of nearest human habitation including schools and other public amenities located nearest to source of the dust generation as applicable. Further, 11 continuous air quality monitoring systems may be installed in Joida and Koira regions and one in Baripada/ Rairangpur region. (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral. (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of 3 using closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine (periodically, near truck entry and exit gate). Responsibility: Individual Mine Lease Holders and SPCB.

- 23) **Noise and Vibration Related:** (i) Blasting operation should be carried out only during daytime. Controlled blasting such as Nonel, should be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. (ii) Appropriate measures (detailed in Section 5.4) should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs. (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the noise levels in the report. The data should be used to map the noise generation from different activities and efforts should be made to maintain the noise levels with the acceptable limits of CPCB (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored atleast once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.
- 24) **Water/Wastewater Related :** (i) In general, the mining operations should be restricted to above ground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro- geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ outcome of such study may be reflected/incorporated in the EIA/EMP report of the mine appropriately. (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flow rate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas and river passing thorough the mine lease area (upstream and downstream locations) should be carried out on monthly basis. (iii) Regular monitoring of ground water level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis. (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region. (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoff etc.) should be taken

to prevent pollution of nearby river/other water bodies. Water quality monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted through NABL/ NABET approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable. (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage treatment plant should be installed for the employees/colony, wherever applicable. (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization. (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls.(xi) Trenches / garland drain should be constructed at the foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease areas and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis. (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water withdrawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.

- 25) **Land/ Soil/ Overburden Related** (i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years or as per provisions mentioned in the mine plan/ scheme). The topsoil should be used for land reclamation and plantation appropriately. (ii) Fodder plots should be developed in the non-mineralised area in lieu of use of grazing land, if any. (iii) Over burden/ low grade ore should be stacked at earmarked dump site(s) only and should not be kept active for long period. The dump height should be decided on case to case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc. (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil, OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data.Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals. (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled area should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating. (vi) Hazardous waste such as, waste oil, lubricants, resin, and coal tar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease

Holders.

- 26) **Ecology/Biodiversity (Flora-Fauna) Related:** (i) As per the Red List of IUCN (International Union for Conservation of Nature), six floral species and 21 faunal species have been reported to be under threatened, vulnerable & endangered category. Protection of these floral and faunal species should be taken by the State Forest & Wildlife Department on priority, particularly in the mining zones, if any. (ii) The mines falling within 5-10 km of the Karo-Karampada Elephant corridor buffer need to take precautionary measures during mining activities. The forest and existing elephant corridor routes are to be protected and conserved. Improvement of habitat by providing food, water and space for the elephants is required to be ensured to avoid Man-Elephant conflicts. Though as per the records of State Forest Department, movement of elephants in the Karo-Karampada elephant corridor within 10 km distance from the mines in Joda and Koira is not observed, the Forest Department shall further record and ensure that elephant's movement is not affected due to mining activities. (iii) All precautionary measures should be taken during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna should be prepared and implemented in consultation with the State Forest and Wildlife Department within the mine lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department. (iv) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner. (v) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species /grass species/scrubs etc., distance between the plants and survival rate should be recorded. (vi) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation. (vii) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value. (viii) Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status, along with expenditure details. (ix) Similarly, Wildlife Department is also required to record and document annual status of wildlife in the region and should identify the need for wildlife management on regional level. (x) Maintenance of the ecology of the region is prime responsibility of the State Forest and Wildlife Department. They need to periodically review the status and identify the need for further improvement in the region. The required expenditure may be met from the funds already collected in the form of compensatory afforestation and wildlife management. Further, additional fund, if required can be sought from DMF. Responsibility: Individual Mine Lease Holders and State Forest & Wildlife Department.
- 27) **Socio-Economic Related:** (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities. Further, basic amenities and infrastructure facilities like education, medical, roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region. (ii) Land outtees and land losers/affected people, if any, should be compensated and rehabilitated as per the national/state policy on Resettlement and Rehabilitation.

(iii) The socio-economic development in the region should be focused and aligned with the guidelines/initiatives of Govt. of India/ NITI Aayog / Hon'ble Prime Minister's Vision centring around prosperity, equality, justice, cleanliness, transparency, employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education, medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for "Samagra Vikas" of these blocks well as other blocks of the district. While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by Ministry of Mines, Govt. of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.

- 28) **Road Transport Related:** (i) All the mine lease holders should follow the suggested ore transport mode (SOTM), based on its EC capacity within next 5 years. (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the mine, as suggested in Chapter 10. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport. (iii) Transportation of ore should be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PM₁₀ should be monitored near the roads towards entry & exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders and Dept. of Steel & Mines
- 29) **Occupational Health Related:** (i) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects periodically. (ii) Occupational health surveillance program for all the employees/workers (including casual workers) should be undertaken periodically (on annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately, if needed. (iii) Occupational health and safety measures related awareness programs including identification of work related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis. A full time qualified doctor should be engaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and record should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less) should be conducted followed by follow-up of actions, wherever required. Occupational health centre should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer)
- 30) **Reporting of Environmental Sustainability Achievement:** All the mines should prepare annual environmental sustainability report (ESR), highlighting the efforts made towards environmental protection with respect to different environmental components vis-à-vis production performance of the mine on monthly basis. The data collected as per EC and CTE/CTO conditions should be utilized to prepare the annual sustainability report. The mines performing high with effective environmental safeguards may be suitably recognized/rewarded. "Star Rating Format" formulated by the Ministry of Mines along with environmental sustainability report may be used.
- 31) **Environmental Monitoring Requirements at Regional Level:** Apart from strict compliance and monitoring by individual mine lease holder, there is a need for simultaneous monitoring in each of the regions by competent expert agencies under the guidance/ supervision of concerned regulatory agency. Details of the studies required to be done on regular basis (continuously for 5 years) through responsible agency (organization of national/state repute) and time frame are suggested in Table.

Table: Suggested Environmental Monitoring Requirements and Action Plans at Regional Level

Sr. No.	Study Component/ Action Plan	Responsibility	Monitoring and Reporting Time
---------	------------------------------	----------------	-------------------------------

			Frame (Approx.)
1.	<p>Environmental Quality Monitoring with respect to Air, Water, Noise and Soil Quality in each region (Joda, Koira and Baripada/Rairangpur) as per specified frequency shall be done by a third party (preferably Govt.) and/or laboratory approved/ recognized by NABET/ CPCB/ SPCB/ MoEF&CC.</p> <p>All the water bodies (rivers, nallas, ponds etc.) shall be monitored. National/State level research/ academic institutes may be involved initially for couple of years to streamline the activity. The report shall be brought out annually by June each year. The study shall be conducted in consultation with MoEF&CC-RO.</p>	SPCB	Continuous Annually
	<u>Installation of online ambient air quality monitor for PM₁₀, PM_{2.5}, SO_x and NO_x within the mine having more than 3 MTPA EC Capacity</u>	<u>Respective Mine Lease Holders</u>	<u>Continuous Annually</u>
	Installation of online ambient air quality monitor for PM ₁₀ , PM _{2.5} , SO _x and NO _x in the Joda and Koira Region (total 11 locations).	SPCB	Continuous Annually
2.	Status of flora and fauna in each of the regions shall be assessed on annual basis. Changes, if any, taking place in the region shall be brought out clearly. The study shall be conducted in consultation with State Forest and Wildlife Department.	State Forest & Wildlife Dept.	Annually in mining zone and once in 3 years in the region
3.	Socio-economic study incorporating developments taking place in each of the region, CSR initiatives made by the mining companies shall be conducted on annual basis. Further, micro level developmental needs shall be clearly brought out in the report for each region. The study shall be conducted in consultation with district administration.	Respective District Administration	Annually
4.	A detailed hydro-geological study in each of the regions shall be conducted in an integrated manner in consultation with Regional Director, Central Ground Water Board. Accordingly, all project proponents shall implement suitable conservation measures to augment ground water resources in the area.	SPCB	Once in 2 years
5.	The State Govt. shall ensure construction and maintenance of dust free common roads/ appropriate rail network for transport of ore from mines to the consumer end.	Dept. of Steel & Mines	12 months for road network and 5-7 years for rail

			network
6.	<u>Construction and maintenance of dust free roads from respective mine to the main road</u>	<u>Respective Mine Lease Holders</u>	<u>Continuous 6 months</u>
7.	Traffic/road inspection study addressing the condition of traffic/roads leading to different mines and connecting to different railway sidings shall be undertaken on annual basis. Further, detailed traffic study shall be undertaken on every 5 yearly basis to ensure adequacy of road/rail infrastructure in each of the regions. The study can be undertaken through national/ state level research/ academic institute (such as CSIR-CRRI, New Delhi).	Dept. of Steel & Mines	Continuous 6 months
8.	Assessment of land use/ land cover changes in each of the regions, with particular focus on mining areas, afforestation activities, variation in flow path of various water bodies etc. using remote sensing data	ORSAC	Annually
9.	R&D Studies for utilization of low-grade iron ore	Dept. of Steel & Mines through R&D / Academic Institutes	Upto 45% by 2020 and upto 40% by 2025

The data so generated for the region should be made available on the website of Department of Steel & Mines and also at MoEF&CC website, so that it can be effectively utilized by Individual Mine Lease Holders for preparing EIA/ EMP reports. This will meet the requirement for separate one season baseline environmental quality data collection by the individual proponents, if the mine proposed is in the same study region. Further, MoEF&CC (through EAC) can also utilize the data base available in evaluating the proposals for expansion of existing mines or new mines while granting ToR or EC to the mine, taking an holistic view of the region. State Govt. of Odisha should bring out an integrated environmental sustainability report for each of the regions (mainly for Joda and Koia region) incorporating ESR of individual mines and data collected in the region through various agencies, once in 5 years, to plan level of scientific and sustainable mining for the next 5 years.

- 32) Institutional Mechanism for Implementation of Environmentally Sustainable Mining: The present study is not a one-time study, but a process to ensure environmentally sustainable mining activities in the region on long term basis. Looking into the large-scale mining activities and long term perspective for mining vis-à-vis environmentally sustainable mining and upliftment of people of the region, there is a need to create an agency, who will integrate all the aspects relating to sustainable mining in the region on long term basis. It could be a SPV of Govt. of Odisha or a cell within the overall control and supervision of Dept. of Steel & Mines, with members from IBM, GSI, OSPCB, MoEF&CC-RO and other concerned Departments and Mine Owners (EZMA), District Administration. It is found that the strong database available for the region needs to be taken into account to map and establish environmental quality of the region on daily, monthly, seasonal and annual basis. Further, the efforts and initiatives of the mines towards

environmental protection as well as upliftment of the people of the region are required to be integrated, and a systematic plan at the block/regional level needs to be framed for the overall benefit of the local society, region, district, state and the country as a whole. It will be desirable to have proper environmental quality data management and analysis by NEERI or any other agency for next 5 years (six monthly compliance reports followed by field verification) ensuring sustainable mining practices in the region leading to an overall development of the region. District Mineral Funds should be utilized appropriately for various developmental activities/needs of the region. Further, an environmental sustainability report incorporating environmental status of region coupled with social upliftment may be brought out by SPCB or any other authorized agency on annual basis. This report can be used for supporting the regional EIA study, and also need for environmental quality monitoring by individual mine seeking environmental clearance for new mine/ expansion of mine, including public hearing. Since, outcome of the above study reports shall be in the overall interest of all the stakeholders (including local population) of the region, further planning for the region shall warrant cooperation and assistance of all the stakeholders (mine operators, industries, transporters, State & Central Government Offices, MoEF&CC, CPCB, SPCB, Dept. of Steel & Mines, IBM, IMD, NGOs and local people) in sharing the relevant data/information/ reports/documents etc. to continuously improve upon the environmentally sustainable development plan for economic growth in mining sector as well as for improvement in quality of life of the people of the region.

Annexure-III

Standard EC conditions as per Ministry's OM No. 22-34/2018-IA.III, dated 08.01.2019

I. Statutory compliance

- 1) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- 2) The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors before commencing the mining operations.
- 3) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors.
- 4) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.
- 5) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.
- 6) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.
- 7) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.

- 8) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.
- 9) The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".
- 10) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- 11) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- 12) State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- 13) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.
- 14) The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

- 15) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
- 16) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

- 1) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- 2) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground

water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

- 3) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- 4) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.
- 5) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.

- 6) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.
- 7) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
- 8) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

IV. Noise and vibration monitoring and prevention

- 9) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- 10) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
- 11) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining plan

- 12) The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
- 13) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- 14) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.

VI. Land reclamation

- 15) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- 16) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste

dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.

- 17) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- 18) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- 19) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.
- 20) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- 21) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
- 22) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be

governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

VII. Transportation

- 23) No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- 24) The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

VIII. Green Belt

- 25) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the

EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

- 26) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
- 27) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- 28) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- 29) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

IX. Public hearing and human health issues

- 30) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and

necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEFCC Regional Office and DGMS on half-yearly basis.

- 31) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.
- 32) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).
- 33) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1),Forced Vital Capacity (FVC),

and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEFCC annually along with details of the relief and compensation paid to workers having above indications.

- 34) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- 35) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- 36) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

X. Corporate Environment Responsibility (CER)

- 37) The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
- 38) Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEFCC and its concerned Regional Office.

XI. Miscellaneous

- 39) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
- 40) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- 41) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.
- 42) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEFCC.
- 43) The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data / information / monitoring reports.

LIST OF EXPERT APPRAISAL COMMITTEE (Non Coal Mining Sector)

Sl. No	Name and Address	Designation	Signature 27.06.2019	Signature 28.06.2019
1	Dr. S.R. Wate, 148/149, Nagar Vikas Society, Narendra Nagar, Nagpur440015, Maharashtra	Chairman		
2	Dr. Ajay Deshpande, Flat A-101, Pristine Privilege Apartments, Opposite Prism, Near RohanNilay, Behind Spicer College, Aundh, Pune-410007, Maharashtra	Member		
3	Shri G.P. Kundargi, Plot No. 32, MOIL Vatika, Chicholi Road, Fetri, Nagpur 441501, Maharashtra	Member		
4	Dr. A.K. Malhotra, C-6, SubhavnaNiketan, Road No. 41, Pitampura, Delhi- 110034	Member	 27/6/19	 28/6/19
5	Dr. Gurdeep Singh, Department of Environmental Science & Engg. Indian Institute of Technology (Indian School of Mines), Dhanbad-826004	Member	 27/6/19	 28/6/19
6	Shri B Ramesh Kumar, H.No. 6-1-134/6, Balram Compound, Padmarao Nagar, Secunderabad-500025, Andhra Pradesh	Member		
7	Dr. AshaRajvanshi, WII, P.B# 18, chandrabani, Dehradun-248001, Uttarakhand	Member		
8	Prof. S. Ramakrishna Rao, D.No. 50-120-9/1, North Ext., Seethammadhara, Visakhapatnam-530013, Andhra Pradesh	Member	 27/6/19	 28/6/19
9	ShriSantosh Gupta, Flat No. 405, Gaur Green Vista, NyayKhand-I, Indrapuram, Ghaziabad, UP-201014	Member		
10	Dr. Parimal Chandra Bhattacharjee, A/3 Asiyana Housing Complex Maligaon, Guwahati- 781011, Assam	Member	 27/6/19	 28/6/19
11	Prof. MukeshKhare, Department of Civil Engineering, IIT, Delhi	Member		
12	Representative of DGMS Head Office, Sardar Patel Nagar, Dhanbad, Jharkhand 826001 dg@dgms.gov.in	Member		
13	ShriMantuBiswas, Controller of Mines, IBM Block D, Second Floor, Indira Bhavan, Civil Lines, Nagpur - 440001	Member		
14	Shri V.K. Soni, Scientist 'E', IMD, New Delhi - 110 003	Member		
15	Shri. Sundeep, Director IA-Division (Non-coal Mining sector) Agni-A106, Indira Paryavaran Bhawan, Ministry of Environment, Forest & Climate Change, Jorbagh Road, New Delhi- 110003	Member Secretary	 27/6/19	 28/6/19

16. **Dr. Saranya P**
Deputy Director (CRZ)

Agenda for 6th EAC Meeting to be held during June 27-28, 2019

Saranya P
27/6/2019
Page 13 of 34
(Present only
for Agenda 2.1)