

No. J-11015/433/2008 -IA-II (M)
Government of India
Ministry of Environment, Forest & Climate Change
IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,
Jorbagh Road, N Delhi-3

Dated: 10th August, 2015

To,

The General Manager (W B P & Environment)
M/s South Eastern Coalfields Ltd,
W B P & Environment Department,
Seepat Road, P B. No. 60
Bilaspur – 495 006 (Chhattisgarh)

Email: gmwbp.secl@coalindia.in

Sub: Bijari OCP of 1.5 MTPA normative and 2.25 MTPA peak in an ML area of 273.375 ha of M/s South Eastern Coalfields Limited, located in District Raigarh, Chhattisgarh – Environmental Clearance - reg.

Sir,

This is with reference to letter No.43011/59/2008-CPAM dated 29.07.2008 with the application for Terms of Reference (TOR) and this Ministry's letter dated 19.11.2008 granting TOR and Extension of TOR validity dated 16.12.2003. Reference is also invited to the letter No. SECL/BSP/Env./Bijari OC/5441 dated 30.4.2014 and subsequent letter Nos. dated 7.8.2014, 21.10.2014, 16.1.2015, 15.5.2015 & 21.7.2015 for environmental clearance on the above-mentioned subject.

2. The Ministry of Environment, Forest & Climate Change has considered the application. It is noted that the proposal is for grant of Environmental Clearance for **Bijari Open Cast Coal Mine Project of 1.5 MTPA normative and 2.25 MTPA peak in an ML area of 273.375 ha (latitude 20° 15' 28" to 20° 15' 49" North and longitude 83° 20' 59" to 83° 22' 37" East) of M/s South Eastern Coalfields Limited, located in Dist., Raigarh, Chhattisgarh.** The proposal was considered by the Expert Appraisal Committee (EAC) in the Ministry for Thermal & Coal Mining Projects, in its 19th meeting held on 13/14th August, 2014, 29th meeting held on 15/16th January, 2015 & 35th meeting held on 14/15th May, 2015.

3. The details of the project, as per the documents submitted by the project proponent (PP), and also as informed during the above said EAC meetings, are reported to be as under:-

- i. The project was accorded TOR vide letter no. J-11015/433/2008-IA.II (M) dated 18.11.2008. TOR validity extended by one year on 16.12.2013.
- ii. The latitude and longitude of the project are 20° 15' 28" to 20° 15' 49" North and 83° 20' 59" to 83° 22' 37" East respectively.
- iii. Joint Venture: There is no Joint Venture.
- iv. Coal Linkage: New project, at present there is no railway siding nearby. This project is to be linked to

Bijari OCP_EC by M/s SECL



various consumers through road sale consumers or Robertson railway siding situated at a distance of 50 km. After rail corridor comes to existence the coal dispatch of the project shall be linked to the nearest rail corridor.

- v. The land usage of the project will be as follows:

i.Pre-mining	
Total land involved	:273.375ha.
Breakup is as follows:-	
Tenancy	: 227.433Ha.
Forest	: Nil
Government	: 41.592Ha.
Total Land	: 269.025Ha
*Forest land falls in safety zone,	: 4.350Ha
(not to be acquired)	
Total land involved	:273.375Ha.
ii. Post- Mining :	
a) Total quarry area	: 198.483Ha
1. Void / Water body	: 36.363Ha
2.Reclaimed Internal Dump/ Backfilled Area	: 162.120Ha
b) Reclaimed External OB dump	: 17.550Ha
c) Colony, service road, Infrastructure etc	: 17.940Ha
f) Rehabilitation site	: 10.320Ha
g) Safety zone	: 29.082Ha
Total land involved	: 273.375Ha.

iii. Core area:

S No	Particulars	Area in Ha
1	Forest Land	Nil
2.	Government Land	25.430
	Grazing Land	16,162
3.	Tenancy Land	227.433
	Total Land required	269.025

*Forest land falls in safety zone : 4.350Ha (not to be acquired)

- vi. The total geological reserve is 20.53MT. The mineable reserve 17.55 MT, extractable reserve is 17.55 MT. The per cent of extraction would be 100 %.
- vii. The coal grade is D & E .The stripping ratio is 2.72 cum / Te of coal. The average Gradient is 02-05. There will be 3 seams with maximum thickness ranging of 6.33 m.

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- viii. The total estimated water requirement is 420 m³/day. The level of ground water ranges from Pre-monsoon water levels vary from 3.20 m to 9.45 m; Post-monsoon water levels vary from 1.15 m to 4.50 m
- ix. The Method of mining would be by Opencast mining with shovel- dumper & Surface miner.
- x. There is one external OB dump with Quantity of 2.60 million cum in an area of 17.55 Ha with height of 45 meter above the surface level and two internal dump with Quantity of 45.20 million cum in an area of 162.12 ha. height of 45 m. above ground level.
- xi. OB Management has been revised by M/s SECL in consultation with CMPDIL, RI-V re-exercised the matter of OB dump management. The options have been given below:
1. It is submitted that ZERO VOID is not feasible; however it will be kept at the minimum possible.
 2. As per approved Project report of Bijari Opencast mine, total volume of OB has been estimated as 47.80 Mcum. The OB removed during initial years will be placed beyond the incrop of seam XI (bottom). The total volume of external dump has been estimated as 2.60 Mcum. Rest of the OB will be placed in internal dumps. The internal dumping (as has been estimated as 45.20 Mcum) will start when about 200 m working space is available on quarry floor. By adopting the proposed sequence of mining, as the quarry advances, the height of external dump will be restricted to 25.00 m as against earlier proposed 45.00 m. Similarly internal dump height will also be restricted to 25.00 m.

Dump Management:

Scenario I : Post mining : No re - handling of dumps					
Height of dump above G.L. (mtrs)		Vol. of dump (Mm ³)		Area of void in Ha	Depth of void (mtrs)
External dump	Internal dump	External dump	Internal dump		
45 m	45 m	2.60	45.20	36.363	61.40m
Three Tier Dumping with 15m each dump height					
Scenario II : Post mining: re - handling of dumps and management of void					
Height of dump above G.L. (mtrs) after filling void		Total Vol. of dump to be re-handled (Mm ³)	Total cost of re-handling (Rs in Lakhs)	Balance Vol. of void (Mm ³)	Depth of void (mtrs)
External dump	Internal dump				
25.00	25.00	1.224	538.56	19.086	40m
Two Tier Dumping with 12.50m each dump height					

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- xii. The final mine void would be in 36.363 ha with depth of 61.40 m. and the Total quarry area is 198.486 Ha. Backfilled quarry area of 162.120 Ha shall be reclaimed with plantation. A void of 36.363ha with depth of about 61.40mtrs, which is proposed to be converted into water body.
- xiii. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.
- xiv. The **life of mine** is 14 Years.
- xv. **Transportation:** Coal transportation in pit by Tippers, Surface to Siding by Tippers and siding to loading by pay loaders into rail wagons; siding at the pit top shall be ready by mid 2017.
- xvi. There is **R & R** involved. There are 170 PAFs.
- xvii. **Cost:** Total cost of the project is Rs. 164.49 Crore (Based on Revised cost estimate approved on 26.05.2014). CSR Cost: As per CIL Policy for 50 MTPA. R&R Cost Rs. 39.1907 Crore. Environmental Management Cost Rs. 10.3724 Crores.
- xviii. **Water body:** The Jobnar nalla on Eastern side of the mine. Kurket River flowing S-W side of mine boundary at a distance of 2.5Kms
- xix. **Approvals:** Ground water clearance not applicable as it falls under safe category. Board's approval obtained on 29.07.2008. The Revised Cost Estimate /Mine Plan was approved by SECL Board on 26.05.2014. Mine Closure Plan approval on 26.05.2014.
- xx. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
- ix. **Forestry issues:** The total project area is 273.375 ha out of which 4.350 ha of forest land falling in safety zone for which FC would not be required. The project will be executed without use of forest land as per the approved revised mine plan with the administrative approval of CMD, SECL vide file no. SECL/CGM/RGH/SURVEY/011/418 dt. 10.08.2011.
- xxi. Total **afforestation** plan shall be implemented covering an area of 199.670 ha at the end of mining. Green Belt over an area of 20.000Ha. Density of tree plantation 2500 per Ha.
- xxii. There are no **courtcases/violation** pending with the project proponent.
- xxiii. **Public Hearing** was held on 04.05.2013 at Bijari Village, Raigarh. The issues raised in the PH includes policy of Project for poor & Handicapped persons; scheme of education, health, road, water, electricity; scheme to prevent industrial and road accidents due to transportation activity; comment about the demand of opening a school upto 12th standard; policy about the persons who depend on the forest product and affected due to project; scheme of resettlement of rehabilitate etc.
- xxiv. Bijari block is characterised by undulating topography. The drainage is by Kurket River & its tributary nallas. The overall area forms part of Mand River drainage system.
- xxv. Garland drains will be made around the periphery of the quarry. These garland drains will be connected to the local nalla which is not likely to be disturbed by mining operation. Heavy duty pumps will be deployed in rainy season which will throw the accumulated water from the working faces into these garland drains. As the extraction of the quarry advances, the position of garland drain will also advance.
- xxvi. As per approved Project report of Bijari Opencast mine, total volume of OB has been estimated as 47.80 Mcum. The OB removed during initial years will be placed beyond the incrop of seam XI (bottom). The total volume of external dump has been estimated as 2.60 Mcum. Rest of the OB will be placed in internal dumps.
- xxvii. All Statutory permissions / MoU from Sate Govt. shall be obtained for transportation of coal by road.
- xxviii. The Action Plan along with budgetary provisions for the issues raised in the Public Hearing have been made.

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- xxix. A Comprehensive plan for conservation of flora & fauna for Bijari OC has been prepared & submitted by PP to PCCF (Wild life), Chhattisgarh vide General Manager, Raigarh area letter no. SECL/GM/2014/332 dtd 22/23.08.2014 for approval. Approval is awaited.
- xxx. **Details of R & R :** Only Bijari village is to be resettled; R & R site has been finalised at Ghagodi about 10kms from Bijari (10.32Ha); Rehabilitation Package shall be based on as per norms.
- xxxi. Total 16.162 Ha Grazing land is involved in mining lease area.
- xxxii. Bijari Opencast project is a Greenfield project. Presence of active mine (around OCP), adjacent to its western boundary and hilly area within 1.5 Km of its north & north – eastern boundary, might be contributing pollutants close to the limit.
- xxxiii. AAQ modelling based on ISCST-3 (AERMOD VIEW version 8.2.1), USEPA has been used for assessment of impact on ambient air quality at 6 monitoring stations.
- xxxiv. All Roads shall be Black Topped. The Railway corridor shall be functional in 3 years as stated by the Proponent.
- xxxv. AAQ monitoring on the same stations have been carried out in January, 2015 and March, 2015 found within limit. In addition to the protective measures against air pollution proposed in EIA/EMP, formation of green belt is proposed by plantation around the excavation area.
- xxxvi. Efforts shall be made to explore the availability of mechanically covered trucks. The concerned departments of SECL have been requested to explore the possibility.
- xxxvii. A Comprehensive plan for Conservation of flora & fauna for Bijari OC has been prepared & submitted to PCCF (Wild life), Chhattisgarh vide General Manager, Raigarh area letter no. SECL/GM/2014/332 dated 22/23.08.2014 for approval. Approval is awaited. Copy of the Comprehensive plan for Conservation of flora & fauna for Bijari OC has been submitted to the MoEFCC vide our letter no. SECL/BSP/Env/Bijari OC/14/5635 dated 21/22.10.2014.
- xxxviii. All Statutory permissions / MoU from Sate Govt. shall be obtained for transportation of coal by road.
- xxxix. Construction of wider road with a separate lane for the light vehicles will be made which will reduce the possibility of the road accident.
- xl. Necessary arrangements for water spraying will be done on the road of affected area by tanker mounted sprinklers. Financial provision for an amount of Rs. 50.00 lakhs has been kept under the head of Community development under CSR in surrounding villages & Rs. 23.00 lakhs for Dust suppression arrangement.
- xli. Due precaution shall be taken as per Director General of Mine Safety (DGMS) Circulars / guidelines. Latest blasting techniques will be adopted to keep Peak Particle Velocity (PPV) within permissible limit to avoid any damage to the houses. In case there is any complaint regarding damage to any house's due to blasting, matter shall settled down in consultation with State Government Authorities.
- xlii. Check dams / water tanks (Talab) will be provided for rain water harvesting under Community development / CSR in the surrounding villages. Financial provision of an amount of Rs.50.00 lakhs has been kept for this purpose.
- xliii. Presently, there is no railway siding available for Bijari OCP. However, the proposed East Rail Corridor (dedicated for coal transportation) would cater to this project in the near future. The work for this corridor has already started and the proposed year of commissioning of this corridor is 2017-18. After commissioning of this rail corridor 100% coal production of Bijari OCP would be transported by rail only. However till the commissioning of the proposed East rail corridor, the coal would be transported to the nearest railway siding i.e Robertson siding, situated at a distance of 50Km from Bijari OC, by tarpaulin covered trucks.
- xliv. Fixed sprinklers in addition to 06 nos. of mobile sprinklers is proposed for suppression of dust.

4. The EAC received a representation from one of the NGOs requesting Ministry to address issues with regards to Validity of TOR; Air quality; Wildlife & Biodiversity; Water Scarcity and pollution; Drainage; Rail linkage. The proponent responded to the issues and submitted the following:

- i. The TOR was issued on 22.03.2008. As per MOEFCC, O.M. J-11013/41/2006-IA-II(I) dated 22.03.2010, the TOR was valid upto 18.11.2011. Proponent requested for extension of TOR Validity which was recommended by the EAC. The TOR validity extension upto 30.05.2014 was approved by the MEF on 05.12.2013 as "the TOR are site specific and their validity would depend on whether or not there have been any insignificant changes in the zone of impact of a given project. In the instance case, the matter has been considered by the EAC and extension of validity of TOR, has been recommended. The project proponent has also finally got Public Hearing conducted by the SPECB. The delay in conducting the Public Hearing is a matter beyond the control of the project proponent. The Draft EIA/EMP report was submitted to Chhattisgarh Conservation Board/ SPCB for Public Hearing on 09.11.2009. Project Proponent submitted EIA/EMP report to the Ministry for Environmental Clearance on 30.04.2014 after Public Hearing
- ii. The levels recorded in year 2008 are higher than year 2013 because the meteorological parameters specially the max. wind velocity was almost doubled in year 2008 which would have contributed pollution load.
- iii. As against 3 wildlife sanctuaries stated by the complainant in the district of Raigarh, it is informed that there is only one sanctuary namely Gumarda in the Raigarh district falling in Sarangarh block whereas the proposed project is in Gharghora block and aerial distance between the 2 blocks is approximately 50 KMs. A comprehensive plan for conservation of flora and fauna has been submitted by SECL for an amount of Rs. 515.00 lakhs.
- iv. As found from the data of the State Ground Water Board, the nearest groundwater monitoring station close to the proposed mine block, i.e. trend showing an increase in the water level trend during pre-monsoon and post-monsoon. However, from the comparison of the water level monitoring data of Pre-monsoon 2005 and Pre-monsoon 2013 by the project authority in the core and buffer zone of the area, an average decline in the water level of 0.03m has been found for the year 2013, which may be attributed due to decline in rainfall and enhancement of the use of groundwater with increase in the local population. Hence, to mitigate the decline of the groundwater level, proper recharge structure with rainwater harvesting structures will be made to increase the recharge in the aquifers.
- v. The issue of the drainage in the core zone has been addressed properly as it will be taken care with the help of network of garland drains. Garland drains of sufficient capacity will be made around the periphery of the quarry to handle the drainage of catchment area. These garland drains will be connected to the tertiary channel. As the extraction of the quarry advances, the position of garland drain will also advance. Catch drains will also be provided around the external dump to collect the precipitation and finally discharging the same to garland drain network. Financial provision for an amount of Rs. 20.00 lakhs has been made.
- vi. Mine effluent will be discharged outside of the mine, only after proper treatment. Sedimentation tank will be provided for collection of mine effluent. Clean water will be pumped out from these sedimentation tanks. Sedimentation tank act as a settling tank and ensure that the total suspended solids levels of effluents conform to prescribed standards.
- vii. Coal transportation trucks of higher capacity shall be deployed to reduce vehicular pollution; Coal transportation will be done by tarpaulin covered trucks; Widening and strengthening of existing

roads. In this case SECL has taken up widening and strengthening of 18 Km public roads; in consultation with State administration, avenue plantation and road side plantation shall be done wherever feasible; Fixed sprinklers in addition to mobile sprinklers is proposed for suppression of dust.

- viii. The drainage pattern from Hilly area to the ground area of Bijari OC project has been studied by CMPDIL.
- ix. Proponent will not alter the major channels all around the site.

5. The EAC, after detailed deliberations on the proposal in its 35th meeting held on 14/15th May, 2015, recommended the project for grant of Environmental Clearance. The Ministry of Environment, Forest and Climate Change hereby accords Environmental Clearance to the **Bijari Open Cast Coal Mine Project of 1.5 MTPA normative and 2.25 MTPA peak in an ML area of 273.375 ha (latitude 20° 15' 28" to 20° 15' 49" North and longitude 83° 20' 59" to 83° 22' 37" East) of M/s South Eastern Coalfields Limited, located in District Raigarh (Chhattisgarh)** under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions:

- i. The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.
- ii. The validity of the EC is for the life of the Mine or as specified in the EIA Notification, 2006, whichever is earlier.
- iii. An institute of repute should be engaged to assess impact of AAQ in the area both short & long term measures and evolve strategies to minimize dust pollution. Remedial measures recommended through the study should be implemented within six months.
- iv. The conservation plan for preserving flora and fauna prepared by the PP should be reviewed by Wildlife Institute Dehradun and PCCF within three months.
- v. Green belt should be developed all along the approach road on either side in consultation with the district authorities.
- vi. Coal should be dispatched by rail by 2017 through the Eastern Corridor which is under construction.
- vii. As more than 5 MT of coal is envisaged to move from the mine through the rail wagons, Committee also recommended loading through silos.
- viii. Proponent will not alter the major channels all around the site
- ix. Efforts be made to explore the availability of mechanically covered trucks.
- x. All Statutory permissions / MoU from Sate Govt. shall be obtained for transportation of coal by road.
- xi.** Coal transportation in pit by Tippers, Surface to Siding by Tippers and siding to loading by pay loaders into rail wagons.
- xii. The production shall be within the same Mining Lease area.
- xiii. The OB shall be completely re-handled at the end of the mining.
- xiv. Final mine void depth will not be more than 40 m. The void area will be converted into water body. The rest of the area will be back filled upto the ground level and covered with about a meter thick top soil and put to use.
- xv. Garland drains be provided.

- xvi. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine.
- xvii. The land after mining shall be brought back for agriculture purpose.
- xxviii. Mine water should be treated for discharge into the lagoon. The quality of lagoon water shall be regularly monitored and mitigation measures taken.
- xix. The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation.
- xx. Everybody in the core area should be provided with mask for protection against fugitive dust emissions.
- xxi. Dust mask to be provided to everyone working in the mining area.
- xxii. The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area.
- xxiii. People working in the core area should be periodically tested for the lung diseases and the burden of cost on account of working in the coal mine area.
- xxiv. The mining area should be grounded by green belt having thick closed thick canopy of the tree cover.
- xxv. The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilised with plantation so as to withstand the peak water flow and prevent mine inundation.
- xxvi. There shall be no overflow of OB into the river and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project.
- xxvii. OB shall be stacked at two earmarked external OB dumpsite(s) only. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forests & Climate Change and its concerned Regional office on yearly basis.
- xxviii. Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.
- xxix. Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.
- xxx. Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.
- xxxi. Drills shall be wet operated.
- xxxii. The project authorities shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads,
- xxxiii. Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.
- xxxiv. A Progressive afforestation plan shall be implemented covering an area of 199.670 ha at the end of mining, which includes reclaimed External OB dump area (17.550Ha), Internal OB dump area (162.120 ha) and Green belt (20.000Ha) and in township located outside the lease by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500

plants per ha. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.

- xxxv. An estimated total 47.80 Mm³ of OB will be generated during the entire life of the mine. Out of which 2.60 Mm³ of OB will be dumped in one external OB Dumps an earmarked area covering 17.55Ha of land. 45.20 Mm³ of will be two internal OB dump in covering an area of 162.120 ha. The maximum height of external OB dump will not exceed 45 m. The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to MOEFCC and its Regional Office on yearly basis.
- xxxvi. The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.
- xxxvii. Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out.
- xxxviii. The mining should be phased out in sustainable manner. No extra over burden dumps are permitted.
- xxxix. No groundwater shall be used for mining operations.
- xl. Of the total quarry area of 198.486 ha. the backfilled quarry area of 162.120 ha shall be reclaimed with plantation and a void of 36.363ha which is proposed to be converted into a water body shall be gently sloped and the upper benches shall be terraced and stabilised with plantation/afforestation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.
- xli. Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment, Forests & Climate Change and tot eh Central Pollution Control Board quarterly within one month of monitoring.
- xl.ii. The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- xl.iii. Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater.
- xl.iv. Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialised agency /institution within the District/State and the results reported to this Ministry and to DGMS.
- xl.v. Land oustees shall be compensated as per the norms laid out R&R Policy of CIL or the National R&R Policy or R&R Policy of the State Government whichever is higher.
- xl.vi. For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEFCC and its concerned Regional office
- xl.vii. A detailed Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forests & Climate Change within 6 months of grant of Environmental Clearance.
- xl.viii. The project authorities shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance life of the mine.

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xlix. Corporate Environment Responsibility:

- a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
- b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
- c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.
- d) To have proper checks and balances, the company shall have a well laid down 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.

B. General Conditions:

- i. No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forest & Climate Change.
- ii. No change in the calendar plan of production for quantum of mineral coal shall be made.
- iii. Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM₁₀, PM_{2.5}, SO₂ and NO_x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- iv. Data on ambient air quality (PM₁₀, PM_{2.5}, SO₂ and NO_x) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.
- v. Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.
- vi. Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.
- vii. Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.
- viii. Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.
- ix. Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.
- x. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records



- maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.
- xi. A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.
 - xii. The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.
 - xiii. The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the Ministry of Environment, Forests & Climate Change at <http://envfor.nic.in>.
 - xiv. A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.
 - xv. A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.
 - xvi. The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.
 - xvii. The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB.
 - xviii. The Regional Office of this Ministry located in the Region shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
 - xix. The Environmental statement for each financial year ending 31 March in For –V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&CC by e-mail.

6. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.

7. The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent

8. The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection.



9. The Proponent shall setup an Environment Audit cell with responsibility and accountability to ensure implementation of all the EC Conditions.

10. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

11. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.

12. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

SKD
10/8/2015

(S. K. Srivastava)
Scientist E

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. The Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur.
3. The Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arera Colony, Bhopal 462016.
4. The Member Secretary, Chhattisgarh Environment Conservation Board, Commercial Complex, C.G. Housing Board Colony, Kabir Nagar, Raipur Chhattisgarh – 492 099.
5. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. The Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. The Advisor, Coal India Limited, SCOPE Minar, Core-I, 4th Floor, Vikas Marg, Laxmi Nagar, New Delhi.
8. The District Collector, **Raigarh**, Government of Chhattisgarh.
9. Monitoring File 10. Guard File 11. Record File. 12. Notice Board

SKD
10/8/2015

(S. K. Srivastava)
Scientist E