

No. J-11015/212 /2010-IA.II (M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
CGO Complex, Lodi Road,
New Delhi -110003.

To,

Dated: 6th February,, 2013

The General Manager (E&F)
M/s Bharat Coking Coal Ltd.,
Koyala Bhawan,
Dhanbad-826005
Jharkhand

Sub. : Cluster IV (6 mines with production capacity 2.851 MTPA (Normative) 3.706 MTPA (Peak). in a combined ML area of 1123.79 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand excluding Gaslitand Colliery UG -Environment Clearance –reg.

Sir,

This is with reference to letter no.43011/20/2010-CPAM dated 13.05.2010 along with the application for Terms of Reference (TOR) and this Ministry's letter Dated 04.11.2010 granting TOR. Reference may please made to the letter no. BCCL/GM (Env.)/EMP/ F-2012/270 dated 06.04.2012, 12.05.2012, 04.7.2012 and 22.08.2012 for environmental clearance for the above-mentioned project.

2. The Ministry of Environment & Forests has considered the application. It is noted that the proposal is for grant of Environmental Clearance for new Cluster IV Group of 6 Mines (Four are operating mines namely **Salanpur Colliery UG, Katras Choitudih Colliery UG , Amalgamated Keshalpur & West Mududih UG and OC (mixed mine), Amalgamated Angarpathra & Ramkanali colliery UG. The Gaslitand colliery UG is closed.** The proponent has informed that:

- i. This proposal does not involve increase in lease hold area, change in technology or change in product mix in the mines.
- ii. The area has undulating topography 6 mines of which 3 are UG mines and 1 mixed (OC and UG) in operation, and one UG mines is closed for production in a combined ML area of **1123.79 ha** and production capacity of 2.851MTPA (Normative) 3.706 MTPA (**peak**). as given below:

Cluster No. IV mines				
S.N.	Name of mines	Production Capacity (MTPA)		Leasehold area (ha)
		Normative	Peak	
1.	Salanpur Colliery UG	0.15	0.195	177.49
2.	Katras Choitudih Colliery UG	0.22	0.286	228.00
3.	a) Amalgamated Keshalpur & West	0.19	0.247	325.00

	Mududih UG	2.00	2.6	
4.	b) Amalgamated Keshalpur & West Mududih OC Amalgamated Angarpathra & Ramkanali colliery UG	0.291	0.378	254.64
5.	Gaslitand Colliery UG (Closed for Production)	0.00	0.00	138.66
	Total	2.851	3.706	1123.79

LAND USE OF CLUSTER IV

S.No	Type Land Use	Present Mining Land Use (ha)	Proposed Mining Land Use (ha)	Post-Mining Land Use (ha)
1.	Running quarry			
	Backfilled	71.63	71.63	0.00
	Not Backfilled	31.68	31.68	0.00
2.	Abandoned quarry			
	Backfilled	14.26	0.00	0.00
	Not Backfilled	87.48	87.48	0.00
3.	External OB dump	14.82	14.82	0.00
4.	Service building/mine infrastructure	17.02	17.02	17.02
5.	Coal dump	4.36	4.36	0.00
6.	Homestead land	132.71	132.71	132.71
7.	Agriculture land	21.22	21.22	21.22
8.	Forest land	0.00	0.00	0.00
9.	Plantation/reclamation	74.67	88.93	794.09
10.	Water body	48.31	48.31	48.31
11.	Barren land	495.19	495.19	0.00
12.	Rail, Road etc	106.52	106.52	106.52
13.	Others	3.92	3.92	3.92
	Total	1123.79	1123.79	1123.79

- iii. The area is drained by Katri Nala which flows across the block and joins Khudiya Nala towards the south-west of the block. River Damodar flows at a distance of 7.5 km and joins River Barakar in the East. No nala diversion is proposed.

Major Project Parameters of Cluster IV Mines						
Name of mines	Salanpur Colliery UG	Katras Choitudih Colliery UG	West Mududih & Keshalpur UG and OC	Angarpathra & Ramkanali colliery UG	Gaslitand Colliery UG	Total
Life of mine	>30 years	>30 years	>30 years	>30 years	Closed mine	
Method of mining	Bord & Pillar	Bord & Pillar	Shovel-dumper combination	Bord & Pillar	-	

Details of Rehabilitation in Cluster IV		
S.N.	Parameter	Details
1	Total OB available	33.45 Mm ³
2.	Total Unstable Sites	51 no. including 3 active fires
3.	Total unstable Areas	1078829 sq. m including 358270 sq.m fire area
4.	No. of Houses to be rehabilitated	7012 no. as per JAP
5.	Land for Resettlement	7.728 ha (BCCL land) 14.23 ha (Non-BCCL land)
6.	Cost of rehabilitation	Rs 26274 lakhs
7.	Total cost of fire dealing	Rs 3499 Lakhs

			in OC & Bord & Pillar in UG			
Production in (1993-94) in MT	0.227	.0161	1.294	0.604	0.074	2.380
Production in 2008-09	0.121	0.596	1.768	0.201	0.00	2.180
Production in 2011-12 (MT)	0.071	0.0466	2.115	0.156	0	2.389
Proposed peak Production	0.195	0.286	3.706	0.378	-	-

Major Environmental Issues of Cluster-IV		
S.N.	Issues	Mitigation measures and Benefit
1.	Ext. OB Dumps (49.33 ha)	External OB dump will accommodate 28.96 Mm ³ of OB and the rest 16.5Mm ³ OB would be dumped internally plantation would be carried out on both external and internal dump.
3.	Fire /Unstable area 3 site with 358270 Sq km	Extraction of fire and filling with cohesive soil at the cost of Rs 34.99 crores.
4.	Loss of coal (10% locked in barriers)	Recover 25.69 MT from barriers
5.	Reclamation /Mine closure	10 ha plantation carried out every year. (Funds allocated for mine closure as per MOC guidelines and adopted by BCCL @Rs 1 lakhs /ha in case of U/G mine and Rs 6 lakhs/ha in case of OCP mines)A total of Rs 3298.56 lakhs has been earmarked for mine closure of the cluster).
6.	CSR for a total of Rs. 142.55 lakhs per year@ Rs 5/T of coal	To address socio-economic issues.

- iv. The peak water requirement of Cluster-IV would be 6786 m³/day (1226 m³/day for mining operations and 5560m³/day for domestic).
- v. The depth of the final mine void would be 15-20m in an area of 139.23 ha at the end of mining. Ground water level is in the range from 0.70-11.70 m bgl during pre-monsoon

and 0.5-6.55 m bgl during post-monsoon in the core zone. The existing mining void is in 119.16 ha area with 15-20 mt depth. There will be no void at the end of mining. It was informed that Salanpur Underground Mine of Katras area of BCCL is being operated by Bord & Pillar method of mining in seam IV, III&II and Opencast mine by Shovel-dumper combination.

- vi. The proposed transportation for cluster –IV would be that the transportation for Salanpur Colliery UG of 0.15 MTY is from Sijua existing siding at the distance of 6.652 km and proposed siding would be at Salanpur siding located at the distance of 0.837 km from the mines. For the Katras Choitudih Colliery UG 0.22 MTY, the coal transportation is presently from Katras Choitudih existing siding at the distance of 0.944 km would remain same. For the proposed Amalgamated Keshalpur & West Mududih OC, 2 MTY coal transportation from Sijua existing siding at the distance of 3.791km distance would be reduced to 2.820 km from same siding and for the Amalgamated Keshalpur & West Mududih UG, 0.19 MTY coal transportation from Sijua existing siding at the distance of 3.4 km distance would be reduced to 2.429 km from same siding. For the Amalgamated Angarpathra & Ramkanali colliery UG, 0.291 MTY coal transportation is from Sijua existing siding at the distance of 1.712 km distance will be reduced to 0.653 km from same siding. After 15 years in Phase –II, the coal transportation would be mainly by Conveyor to the railway siding at Tetulmari and loading would be by rapid loading system. Presently the transportation of coal is by road upto the railway siding.
- vii. Total 45.5 Mm³ of OB will be generated from one opencast mine (Amalgamated Keshalpur & West Mududih OCP) and shall be simultaneously internally dumped into the quarry. The existing OB dump spreads over 14.82 ha of area consisting of 2.96Mm³. The OB material shall be liquidated and internally dumped in the post-mining stage upto the ground level and plantation will be developed over them. There shall not be any external dump in the post-mining stage. 119.16 ha of voids in the existing as well as abandoned quarries shall be backfilled with OB material in the post-mining stage.
- viii. 48.31 Ha of the existing water body will continue as water body in the post mining stage. Top soil will be spread over the dumps in uniform thickness in post mining stage. Total area of 720.24 ha is to be brought under plantation by planting 1797000 nos of plants at the end of mining.
- ix. As per subsidence, slope and tensile strain studies over the area due to coal extraction in Underground mining. There would be no subsidence and tensile strain is 2.72mm/m and 3.06mm/m as the values are within prescribed limit. However, in Amalgamated Keshalpur & West Mududih UG, the tensile strain would be 21.82 mm to 66.69 mm/m which has to be monitored.
- x. R&R is involved. Out of 595 unstable sites identified in the Master Plan, 51 sites consisting of 7012 no. PAF's are affected in this cluster. The affected families will be rehabilitated in adjacent non-coal bearing area at a cost of Rs. 26274 lakhs. The people would be rehabilitated in colonies, which fall in Nagarikalan, Pokerbera, Kolipur, Pocheriand Darida, Tilatanr, Bamkunda, Jursabad, Khrya, Mahanpur, Damodarpur, Mouzas. The Capital cost of R&R would be Rs 26274 lakhs and the annual recurring cost would be Rs 328.55 lakhs. The fires and rehabilitation of affected families from fire and subsidence areas within the cluster would be carried out in a phase wise manner.
- xi. All the mines of the clusters are pre-nationalization mines. Therefore, no mining plan is existing.
- xii. It was informed that Cluster-IV falls in Dhanbad critically polluted area.
- xiii. The CSR Cost would be Rs 142 .55 Lakhs /annum @Rs 5/T of coal. The Capital cost of EMP measures would be Rs 26719.4 lakhs including Rs. 26273.69 lakhs provided under Jharia Action Plan for Cluster-IV. Capital Cost of the project Rs. 191.188 Crores.

Company has adopted “Corporate Environmental Policy” which has been approved by its Board of Directors on 21.04.2012.

- xiv. It was further stated that the Jharia Action Plan, which consists of all fire dousing projects/plans had been surveyed by DGMS and DGMS is also the monitoring and scrutinizing agency constituted by the Hon’ble Supreme Court of India under the WP(PIL) 387/1997 i.e. Haradhan Roy Vs UOI. It was clarified that any new scheme of fire dousing would need the approval of DGMS.
- xv. The Public Hearing was held on 21.01.2012.

3. This is a violation case. As per the Office Memorandum dated 12.12.2012, issued by the Ministry of Environment and Forests, with regard to the consideration of proposals for ToR/Environment clearance/CRZ clearance involving violation of the Environment (Protection) Act, 1986/EIA notification, 2006/CRZ notification, 2011, the Environmental Clearance will be granted after the written commitment in the form of a formal resolution by the Board of Directors submitted to the MoEF to ensure that violations will not be repeated and the State Government concerned initiates credible action on the violation by invoking powers under Section 19 of the Environment (Protection) Act, 1986 for taking legal action under section 15 of the Act for the period for which the violation has taken place and evidence provided to the MoEF of the action taken. In this case, the Board’s resolution has been received. As regards credible action, Jharkhand State Pollution Control Board, has issued directions of closure of collieries of M/S Bharat Coking Coal Limited under section 31A & 33A of Air (Prevention and Control of Pollution) Act, 1981 & Water (Prevention and Control of Pollution) Act, 1974 respectively for operating without obtaining Environmental Clearance. M/s BCCL has filed a Writ Petition (No. 4944/11) challenging the Board’s directions of closure. The Jharkhand High Court has passed interim order on 25.08.2011 that “Till then, status quo, as on today, shall be maintained by the parties” and passed order on 18.01.2012 that “Until further orders, the interim order dated 25.08.2011 shall continue”. In the light of interim orders of the Jharkhand High Court, the State Pollution Control Board is seeking legal opinion for initiating legal action against the collieries of BCCL in the Court of Law in terms of the OM of the MoEF. The State Government has been asked to expedite taking legal opinion and taking action under intimation to the MoEF.

4. The proposal was considered in the Expert Appraisal Committee (EAC) (Thermal & Coal Mining) and recommended in its 53rd meeting held on 16-17 July, 2012 for granting Environmental Clearance. The Ministry of Environment & Forests has examined the application in accordance with the EIA Notification 2006 and under the provisions thereof, hereby accords environmental clearance for the above-mentioned **Cluster IV (6 mines with production capacity 2.851MTPA (Normative) 3.706 MTPA (peak). in a combined ML area of 1123.79 ha) excluding Gaslitand Colliery UG of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand** under the provisions of the Environmental Impact Assessment Notification, 2006 and amendments thereto and Circulars issued thereon and subject to the compliance of the following specific conditions, in addition to the general conditions as mentioned below:

A. Specific Conditions:

- (i) The maximum production from one opencast section in the cluster shall not exceed beyond that for which environmental clearance has been granted for the cluster IV as below:

Cluster No. IV mines				
S.N.	Name of mines	Production Capacity (MTPA)		Leasehold area (ha)
		Normative	Peak	
1.	Salanpur Colliery UG	0.15	0.195	177.49
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4.	Amalgamated Angarpathra & Ramkanali colliery UG	0.291	0.378	254.64
5.	Gaslitand Colliery UG (Closed for Production)	0.00	0.00	138.66
	Total	2.851	3.706	1123.79

- (ii) The measure to identify in the Environmental Plan for Cluster- IV groups of mine and the conditions given in this environmental clearance letter shall be dovetailed to the implementation of the Jharia Action Plan.
- (iii) The proponent shall prepare time -series maps of the Jharia Coalfields through NRSA to monitor and prevent fire problems in the Jharia Coalfields by Isothermal mapping /imaging and monitoring temperatures of the coal seams (whether they are close to spontaneous ignition temperatures) and based on which, areas with potential fire problems shall be identified. Measures to prevent ingress of air (Ventilation) in such areas, to prevent restart fresh/spread fires in other areas including in mines of cluster IV shall be undertaken. Expertise available internationally could also be utilized for control of fire in Jharia Coalfields and for their reclamation and to further minimize time for fire and subsidence control. Monitoring of fire should be carried out regularly.
- (iv) Underground mining should be taken up after completion of reclamation of Opencast mine area after 15 years.
- (v) 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.
- (vi) The rejects of washeries in Cluster –IV should be send to FBC based plant.
- (vii) No mining shall be undertaken where underground fires continue. Measure shall be taken to prevent/ check such fire including in old OB dump areas where the fire could start due to presence of coal /shale with sufficient carbon content.
- (viii) There shall be no external OB dumps. OB produce from the one OC Patch of cluster IV will be 45.5 Mm³. OB from one OCP patches in mixed mine shall be backfilled. At the end of the mining there shall be no void and the entire mined out area shall be re-vegetated. Areas where opencast mining was carried out and completed shall be reclaimed immediately thereafter.
- (ix) A detailed calendar plan of production with plan for OB dumping and backfilling (for OC mines) and reclamation and final mine closure plan for each mine of cluster-IV shall be drawn up and implemented.

- (x) Mining shall be carried out as per statuette from the streams/nalas flowing within the lease and maintaining a safe distance from the Nalas flowing along the lease boundary. A safety barrier of a minimum 60m width shall be maintained along the nalas/water bodies. The small water bodies in OC shall be protected to the extent feasible and the embankment proposed along water body shall be strengthened with stone pitching taking into account the highest flood level, based on past data, so as to guard against mine inundation. The slope of the embankment shall at least 2:1 towards the ML. The height of the embankment shall be at least 3 m higher than the HFL. The embankment to be constructed by OB /solid waste shall be strengthened with stone pitching. Slope stability of the embankment shall be done by planting suitable grass and shrubs using native species selected from the study area.
- (xi) Active OB dumps near water bodies and rivers should be rehandled for backfilling abandoned mine voids. However, those which have been biologically reclaimed need not be disturbed.
- (xii) Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation. During post mining stage, a total of 794.09 ha area would be reclaimed. The total additional area under plantation would be 719.42 ha (101.7 ha abandoned quarry area, 103.31 ha active quarry area, 14.82 OB dump outside quarry area, 4.36 ha service building /mine infrastructure area /coal dump etc, 160.25 ha green belt around OCP, 334.94 ha barren area), by planting 17,98,550 plants at a total cost of Rs 396.41 lakhs.
- (xiii) The road should be provided with avenue plantation on both side as trees act as sink of carbon and other pollutant.
- (xiv) Specific mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted are and relevant for Cluster- IV shall be implemented.
- (xv) The locations of monitoring stations in the Jharia Coalfields should be finalized in consultation with the Jharkhand State Pollution Control Board. The Committee stated that smoke/dust emission vary from source to source (fuel wood, coal, flyash from TPPs, silica from natural dust, etc) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM₁₀ and PM_{2.5}) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.
- (xvi) The Transportation Plan for conveyor-cum-rail for Cluster-IV should be dovetailed with Jharia Action Plan. Road transportation of coal during Phase-I should be by mechanically covered trucks, which should be introduced at the earliest. The Plan for conveyor-cum-rail for Cluster-IV should be dovetailed with Jharia Action Plan. The Committee desired that road transpiration of coal during phase-I should be by mechanically covered trucks.
- (xvii) A study should be initiated to analyse extent of reduction in pollution load every year by reducing road transport
- (xviii) R&R of 7012 nos of PAF's involved. They should be rehabilitated at cost of Rs 26274 lakhs as per the approved Jharia Action Plan.
- (xix) Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be dome four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting

- measures shall be undertaken in case monitoring of water table indicates a declining trend.
- (xx) Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.
 - (xxi) Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.
 - (xxii) High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
 - (xxiii) Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.
 - (xxiv) Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.
 - (xxv) No depillaring operation shall be carried out below the township/colony.
 - (xxvi) A detailed CSR Action Plan shall be prepared for Cluster IV group of mines. Specific activities shall be identified for CSR for the budget of Rs 142 .55 Lakhs /annum @ Rs 5/T of coal provided for CSR and Rs. 5/T of coal as recurring expenditure. The 416.98 ha of area within Cluster IV ML existing as waste land and not being acquired shall be put to productive use under CSR and developed with fruit bearing and other useful species for the local communities. Third party evaluation shall be got carried out regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integrated with activities being taken up under CSR. The details of CSR undertaken along with budgetary provisions for the village-wise various activities and expenditure thereon shall be uploaded on the company website every year. The company must give priority to capacity building both within the company and to the local youth, who are motivated to carry out the work in future.
 - (xxvii) Details of transportation, CSR, R&R and implementation of environmental action plan for the clusters-IV should be brought out in a booklet form within a year and regularly updated.
 - (xxviii) Mine discharge water shall be treated to meet standards prescribed standards before discharge into natural water courses/agriculture. The quality of the water discharged shall be monitored at the outlet points and proper records maintained thereof and uploaded regularly on the company website.
 - (xxix) No groundwater shall be used for the mining activities. Additional water required, if any, shall be met from mine water or by recycling/reuse of the water from the existing activities and from rainwater harvesting measures. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry to dewatering of mine.
 - (xxx) The void shall be converted into a water reservoir of a maximum depth of 15-20 m and shall be gently sloped and the upper benches of the reservoir shall be stabilised with plantation and the periphery of the reservoir fenced. The abandoned pits and voids should be backfilled with OB and reclaimed with plantation and or may be used for pisciculture.
 - (xxxi) Regular monitoring of groundwater level and quality of the study area 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 including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control

- Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.
- (xxxii) ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to confirm to prescribed standards in case discharge into the natural water course
 - (xxxiii) The location of monitoring stations in the Jharia coalfield should be finalized in consultation with Jharkhand State Pollution Control Board.
 - (xxxiv) 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 MOEF and its Regional office at Bhubaneswar.
 - (xxxv) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five year before mine closure for approval. Habitat Restoration Plan of the mine area shall be carried out using a mix of native species found in the original ecosystem, which were conserved in-situ and ex-situ in an identified area within the lease for reintroduction in the mine during mine reclamation and at the post mining stage for habitat restoration.
 - (xxxvi) Implementation of Final Mine Closure Plan for Cluster IV, subject to obtaining prior approval of the DGMS in regard to mine safety issues.
 - (xxxvii) A separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.
 - (xxxviii) 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 and Forests.
- (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 Regional Office at Bhubaneswar 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 Regional Office at Bhubaneswar.
- (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 at <http://envfor.nic.in>.
- (xiv) A copy of the environmental clearance letter shall be marked to concern Panchayat/ZilaParishad, 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 at Bhubaneswar 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 by E-mail
5. The Ministry or any other Competent Authority may stipulate any further condition(s) for environmental protection.
 6. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.
 7. 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. 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.
 8. The Environmental Clearance is subject to the outcome of the Writ Petition filed by M/S Bharat Coking Coal Limited (BCCL) in response to the closure orders issued by the Jharkhand State Pollution Control Board which is pending in the Jharkhand High Court.

(Dr. Manoranjan Hota)
Director

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Jharkhand, Secretariat, Ranchi.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandrashekarapur, Bhubaneswar – 751023.
4. Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), H.E.C., Dhurwa, Ranchi – 834004.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. District Collector, dist. Dhanbad Government of Jharkhand.
8. Monitoring File 9. Guard File 10. Record File

(Dr. Manoranjan Hota)
Director