



BHARAT COKING COAL LTD.
A Mini Ratna Company
(A Subsidiary of Coal India Ltd.)
REGD. Office: Koyla Bhawan, Koyla Nagar, Dhanbad-826005
CIN No. U10101JH1972GO1000918
**OFFICE OF THE PROJECT OFFICER, AMP COLLIERY
BARORA AREA**



Ref. No. PO/AMPC/AR-I/Env./2025/24

Date: -02.01.2025

03

To,
The District Forest Officer (DFO)
Forest Division, Combined Building
Dhanbad, Jharkhand

Sub: - Compliance of condition for diversion of 7.6 ha forest land transferred for Muraidih open cast project.

Dear Sir,

With reference to letter no. 10-76/FCE dated 09.06.1997 and letter no.2640 & 2943 dated 07.10.2024 & 23.11.2024, the compliance report against diversion of 7.6 Ha of forest land in Muraidih open cast project in Dhanbad district of Bihar (Jharkhand) is attached.

This is for your kind perusal and needful, please.

Yours faithfully

Project Officer
AMP Colliery

Encl:-

1. Compliance report.
2. Notification of Govt. of Bihar.
3. Copy of EC.

Cc to:-

1. HoD (Environment), Koyla Bhawan
2. General Manager, Barora Area
3. Area Manger (Estate), Barora Area
4. Area Manager (Survey), Barora Area
5. Area Manager (Envt.), Barora Area

Project Officer
Muraidih Colliery

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**COMPLIANCE OF CONDITION FOR DIVERSION OF 7.6 HA FOREST LAND TRANSFERRED
FOR MURAIIDIH OPEN CAST PROJECT**

Compliance against letter no. 10-76/FCE dated 09.06.1997 regarding diversion of 7.6 Ha of forest land for Muraidih open cast project in Dhanbad district of Bihar (Jharkhand).

Conditions		Compliance																						
1.	Legal status of forest land shall remain unchanged	Legal status of forest land is unchanged.																						
2.	Compensatory afforestation will be raised at the cost of user agency over equivalent non forest land which will be notified as forest land under Indian forest act	For the development of Compensatory afforestation the following non forest land has been provided <table><tr><th>Mouza</th><th>Khata no.</th><th>Plot no.</th><th>Area</th></tr><tr><td rowspan="4">Mahuda</td><td rowspan="4">291</td><td>1711</td><td>2.94</td></tr><tr><td>1845</td><td>10.65</td></tr><tr><td>1846</td><td rowspan="2">0.09</td></tr><tr><td>1858</td></tr><tr><td>Murlidhi</td><td>54</td><td>1049</td><td>5.10</td></tr><tr><td></td><td></td><td></td><td>18.78 Acres (7.6 Ha)</td></tr></table> Plantation has been developed above said land by BCCL and this land has been notified as forest land. (Copy of notification is attached)		Mouza	Khata no.	Plot no.	Area	Mahuda	291	1711	2.94	1845	10.65	1846	0.09	1858	Murlidhi	54	1049	5.10				18.78 Acres (7.6 Ha)
Mouza	Khata no.	Plot no.	Area																					
Mahuda	291	1711	2.94																					
		1845	10.65																					
		1846	0.09																					
		1858																						
Murlidhi	54	1049	5.10																					
			18.78 Acres (7.6 Ha)																					
3.	Reclamation of mined area will be done at the cost of user agency as proposed in the proposal.	The part of the above land has been mined out and reclaimed, and rest will be reclaimed after mining activities.																						
4.	Lease period shall be coterminous with lease under the MMRD act subject to maximum of 30 years	Agree.																						
5.	This approval is subject to environmental clearance	Environmental clearance granted. (EC order no. J/11015/35/2011- IA.II(M) dt. 06/02/2013) (Copy of EC is attached).																						
6.	The forest land shall not be used for any purpose other than the specified in the proposal.	The acquired forest land has been used for the purpose of mining only.																						
7.	Any other condition that the state government may impose from time to time in the interest of afforestation and protection of forests.	Whatever instruction given by state government and forest department is being complied.																						

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Government of Bihar
Department of Forest and Environment

Notification

Patna 15;

No. Van Bho Adhi (2)17/97-805-E-VP, Dated 17.7.1997

In exercise of power conferred by section 29 of the Indian Forest Act 1927 (XVth. of 1927). the State Government hereby make the provisions of chapter IV of the said Act applicable from the date of issue of the notification on the waste land situated in the district of Dhanbad as specified in the schedule annexed hereto excluding "Idgah land".

The land comprised in this notification shall be called "Protected Forest".

The said land has been made available and transferred to the Department of Forest and Environment, Government of Bihar by Bharat Coking Coal limited (a Government of India Undertaking) in lieu of diversion of 18.78 acres of forest land for Muraidih Opencast Project of Bharat Coking Coal Limited for compensatory afforestation under the provisions of the Forest (Conservation) Act 1980. As a result of this transfer the ownership of this land (whose khatiani Raviyat in Bharat Coking Coal Limited) now belongs to the State Government. The possession of the said land has been taken over by Department of Forest and Environment (Dhanbad Forest Division) and it is free from encroachment, Therefore, the said land is free from rights of any private person or community and hence the proceedings with regard to (enquiry and recording of rights of private persons and community as prescribed in subsection (3). section 29 of Indian Forest Act 1927, is not required.

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Schedule

Dist	Village	Thana	Thana Nos.	Khata No.	Khesra No.	Rakaba (Area) in ACra	Government of Bihar
Dhanbad	Mahuda	Topchanchi	342	291	1711	2.94	Government of Bihar
					1845	10.65	
					1846	0.09	
					1858	13.68	
Dhanbad	Murlidhi	Topchanchi	343	54	1049	5.10	Government of Bihar
						18.78	

By order of Governor Bihar

Janki Sharan Prasad 17/7/97

(Janki Sharan Prasad)

Additional Secretary to Government.

Ashok/

आपांक वन भूअधिक 12/17/97-805-E/4040 पटना 15, दिनांक 17-7-1997.

प्रतिनिधि- अधीक्षक, सीमांत, गुणांत, गुंजारबाग, पटना-7 को इसे बिहार राजपत्र के आगामी असाधारण अंक में प्रकाशित प्रेषित ।

2- अधीक्षक से अनुरोध है कि मुद्रित राजपत्र को 500 अतिरिक्त प्रतियाँ भूअ वन एवं पर्यावरण विभाग को भिजवाने का कष्ट करें ।

Janki Sharan Prasad 17/7/97

आपांक वन भूअधिक 12/17/97-805-E/4040 पटना 15, दिनांक 17-7-1997.

प्रतिनिधि- प्रधान मुख्य वन संरक्षक, बिहार, राँची/मुख्य वन संरक्षक

विभागाध्यक्ष सड़ नाभिक पर्यावरण, बिहार, राँची/सभी क्षेत्रीय मुख्य वन संरक्षक

सभी प्रशासकीय आगस्त/सभी वन संरक्षक/सभी सहायक एवं सभी वन प्रबंधन पर्यावरण को सूचार्थ एवं आवश्यक कार्यवाई हेतु प्रेषित ।

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No. J-11015/35 /2011-IA.II (M)
Government of India
Ministry of Environment & Forests



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

To

Dated: 6th February, 2013

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

Sub.: Cluster II (5 Mines of a combined prod. capacity of 15.55 MTPA with a peak prod. of 20.215 MTPA in a combined ML area of 2025.71 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, dist. Dhanbad, Jharkhand-Environment Clearance –reg.

Sir,

This is with reference to letter no.43011/3/2011-CPAM dated 04.02.2011 along with the application for Terms of Reference (TOR) and this Ministry's letter dated 23.03.2011 granting the TOR. Reference is also invited to the letters no. BCCL/GM (Env.)/EMP F-2012/270 dated 06.04.2012, 12.05.2012, and 04.07.2012 for environmental clearance for the above-mentioned project. The Ministry of Environment & Forests has considered the application. It is noted that the proposal is for opening of a new cluster II which consists of 5 mines of which 3 are opencast mines and 2 are mixed (OC and UG) of a combined ML area of 2025.71 ha for a production capacity of 15.55 MTPA (normative) and 20.215 MTPA (peak). Of the 5 mines, 2 mines are proposed (new), namely, Block II Colliery UG mine and Muraidih Colliery UG mine. The rest are operating mines. The proponent has informed that:

(i) Details of these mines are as per the following:

MINES IN CLUSTER II							
S.no	Name of Mine		Status	Prod. capacity (MTPA)		ML (ha)	Life of Mine (years)
				Normative	Peak		
1	Block II Colliery	UG Section	Proposed	0.45	0.585	852.00	30
		OCP Section	Operating	4.0	5.2		26
2	Jamunia	OCP	Operating	1.20	1.56	55.0	6
3	Shatabdi	OCP	Operating	1.40	1.82	181.30	28
4.	Shatabdi OCP	OCP Section	Operating	3.50	4.55	536.41	6
		UG Section	Proposed	2.00	2.60		14

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5	Phularitand	OCP	Operating	3.00	3.90	401.00	18
	Total			15.55	20.215	2025.75	

(ii) The existing level of production in cluster-II are as per the following:

EXISTING LEVEL OF PRODUCTION IN CLUSTER -II			
Coal production in MT for 2011-12			
NAME OF MINE	Normal production (in MT)	One time Fiery coal availed during execution of Master Plan for dealing with fires and subsidence	Total (in MT)
Block II UG Section	Proposed Mine		
Block II OCP Section	1.481	0.0414	1.522
Jamunia OC	0.940	1.694	2.634
Shatabdi OCP	-	1.539	1.539
Muraidih UG Section	Proposed Mine		
Muraidih OCP Section	1.575	0.547	2.122
Phularitand OCP	0.035	0.416	0.451
Total	4.031	4.2374	8.268

(iii) The cluster-II is bound in the east by Cluster-III mines, in the west by River Jamunia, in the north by metamorphic formations and in the south by Cluster-XV mines of BCCL. The mine area is drained in the west by River Khudia flowing easterly and in the east by seasonal nalas flowing westerly to join River Jamunia which flows along the western boundary of the study area and joins River Damodar which is at a distance of 4 km.

(iv) The major project parameters of the 5 mines of Cluster-II are as per the following:

Details of Cluster - II Mines							
Parameter	Block II Colliery		Jamunia	Shatabdi	Muraidih Colliery		Phularitand
	UG Section	OCP Section			OCP Section	UG Section	
Quarry area							
Max depth(m)	250	200	150	80	115	186	142
Method of mining	B&P & Depillaring (caving) with continuous miner	Shovel-dumper combination with dragline	Shovel-dumper combination	Shovel-dumper combination	Shovel-dumper combination	Long wall & B&P	Shovel-dumper combination

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Grade of coal	D/E	WIV	WIV	W-IV	Gr ?WIV-W-III	Gr-A to G	W-II to WIV
Mineable Reserve MT	10.63	102.157	7.279	39.34	18.89	25.166	53.451
Production in MT (1993-94)	0	3.09	0.81	0	1.2		
Production in 2009-10 (MT)	0	2.14	1.18	1.46	2.85	0	015
Proposed peak Production (MT)	0.585	5.20	1.56	1.82	4.55	2.6	3.9
Cost of production (Rs/T)	665.19	785.13	608.25	530.50	344.28	605	326.79

- (v) A total area of 1237.48 ha would be reclaimed and afforested. Eco-restoration of BCCL mine areas is to be implemented in two phases over a period of 10 years, of which, Phase-I is from 2011-16 and Phase-II from 2016-2021. During Phase-I, development of a model restoration plantation is being carried out and thereafter 90 ha area of the area would be restored by BCCL in their 3 mining areas. During Phase-II (2016-2021), replication/expansion of proposed restoration models in the 126 ha area spread over 13 mines area of BCCL would be taken up. Opencast mining is proposed before start of underground mining. There would be no external OB dumps. OB from the 5 OC patches would be backfilled. At the end of the mining there would be no void and the entire mined out area re-vegetated. A minimum safety distance of 60m would be maintained between opencast and underground operations. The details of post-mining land use of Cluster-II are as per the following:

Land Use Details of Cluster II			
S.N	Type Land Use	Present Mining Land Use (ha)	Post- mining Land Use (ha)
1.	Running quarry		
	Backfilled	206.86	0
	Not Backfilled	234.39	0
2.	Abandoned quarry		
	Backfilled	14.29	0
	Not Backfilled	42.07	0
3.	External OB dump	49.33	0
4.	Service building/ mine infrastructure	34.25	0
5.	Coal dump	31.24	0
6.	Rail & Road	71.69	66.47
7.	Homestead land	181.58	147.2
8.	Agriculture land	275.32	153.14
9.	Forest land	29.75	29.75

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10	Plantation	135.6	1237.48
11.	Water body	49.91	139.23
12	Barren land	669.42	252.44
	Total	2025.71	2025.71

Details of Rehabilitation in Cluster- II		
S.N.	Parameter	Details
1.	Total Voids	41.47 Mm ³
2.	Total OB available	33.45 Mm ³
3.	Total Unstable Sites	15 no.
4.	Total Affected Areas	260800 m ²
5.	No. of Houses to be rehabilitated	1137 no. as per JAP
6.	Land for Resettlement	7.728 ha (BCCL land) 14.23 ha (Non-BCCL land)
7.	Total cost of fire dealing	Rs.18235 Lakhs
8.	Total resettlement Cost	Rs 4508.58 Lakhs

FIRE AFFECTED SITES WITH FIRE DOUSING PROJECTS/PLANS IN CLUSTER-II					
S.no	Colliery	Site name & no.	Area affected Km2	No of houses	Rehabilitation cost
1.	Phularitand	AshakutiGawalapatti /O8	0.018	24	66.26
2.	Phularitand	Mandra ,Ganeshpur&Barwabera /O5	0.011	76	340.77

Major Issues of Cluster-II		
S.N.	Major Env. Issues	Mitigation measures and Benefit
1.	Voids(276.46 ha) (234.39 operating quarry+ 42.07 abandoned quarry)	187.14 ha backfilling and 89.32 ha water body
2.	Ext.OB Dumps (49.33 ha)	Use for backfilling and plantation.
3.	Fire /Unstable area 15 site with 0.26Sq km consisting of 1137 PAF	Dig out fire at the cost of Rs.182.35 crores and rehabilitate affected families at the cost of Rs 4508.58 lakhs.
4.	Loss of coal (10% locked in barriers)	Recover 25.69 MT from barriers
5.	Reclamation /Mine closure	Additional plantation in 1201.28 ha land at the cost of Rs 12154.25 lakhs. (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

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		OCP mines)
6.	CSR	Rs 77.50 Lakhs per year @ Rs 5/T of coal

(vi) A total area of 276.46 ha would be reclaimed and afforested. Eco-restoration of BCCL mine areas is to be implemented in two phases over a period of 10 years, of which, Phase-I is from 2011-16 and Phase-II from 2016-2021. During Phase-I, development of a model restoration plantation is being carried out and thereafter 90 ha area of the area would be restored by BCCL in their 3 mining areas. During Phase-II (2016-2021), replication/expansion of proposed restoration models in the 126 ha area spread over 13 mines area of BCCL would be taken up.

(vii) Ground water level is in the range from 1.78-14.44m bgl during pre-monsoon and 1.0 -7.90m bgl during post-monsoon in the core zone. Total water requirement is 7265m³/day, of which 4735m³/day is for mining operations and 2530 m³/day is for domestic use. The mine discharge is 8350m³/day. The existing natural water body would be in 49.91 ha area. But in the post- mining stage, void left in an area of 89.32 ha with water at 15-20 mt depth will be used for community /Pisciculture.

(viii) There are four no. of External OB dumps in a total area of 49.33 ha. Total annual OB production will be 26.3Mm³. Total OB production for the whole cluster will be 484.89Mm³ for the life of Cluster II. In post-mining stage it would be reclaimed. Coal transportation would be mainly by rail cum conveyor mode (19.313 MTPA i.e. 95.53%) and the remaining 0.902 MTPA (4.46%) would be by road.

(ix) There are four existing railway sidings, namely, K.K.C Link Railway siding at the distance of 12.95 km, Barora Washery Siding at 3.9 km, Barora NL Railway siding at 3.4km and Kessurgarh siding at 10.13 km from Cluster-II. Maximum subsidence, slope and tensile strain over the mining area due to coal extraction in Muraidih UG would be 3.98m and in Block-II UG (proposed) would be 2.16m and a tensile strain of 41.7634.89 mm/m and 34.89mm/m respectively.

(x) The project involves R&R of 1137 no. PAFs, of 15 sites, displaced and to be rehabilitated as per JAP in new township adjacent to non-coal bearing area in north of Harnabagan Township in an area of 348.21ha at the cost of Rs 45.08crores. Funds allocated for EMP is Rs2.50/T of coal in case of UG mine and Rs5.50/T of coal in case of OC mine.

(xi) The EMP Capital cost would be Rs 13.12 Crores. A provision of Rs5/T of coal has been made for CSR. The life of Block II Colliery OC is 20 years, Block II Colliery underground mine is 26 years, Jamunia OCP is 6 years, Shatabdi OCP is 28 years, Muraidih Colliery OCP is 6 years and underground mine is 14 years, life of Phularit and Colliery is 18 years.

(xii) The Capital Cost of the project is Rs 812.529 Crores. The capital costs of EMP measures would be Rs 612.15 lakhs. The mines falling in Cluster- II, Shatabdi OCP, Muraidih Colliery underground mine, Block II Colliery underground mine were approved by BCCL Board on 26.12.2002, 11.12.2010 and 18.05.2011 respectively. The Company has adopted "Corporate Environmental Policy" which has been approved by its Board of Directors on 21.04.2012.

(xiii) The Public Hearing for Cluster-II group of 5 mines was held on 16.03.2012.

(xiv) The Stage-I forestry clearance for 29.75 ha of forestland involved in Muraidih colliery of Cluster-II has been sought vide letter no BCCL/GM/AR-I/ED/19/318 Dated 27.07.2010.

2. 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/ELA notification,

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20056/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.

3. 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 II (5 Mines of a combined prod. capacity of 15.55 MTPA with a peak prod. of 20.215 MTPA in a combined ML area of 2025.71 ha) 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 terms and conditions as mentioned below:

A. Specific Conditions

- (i) The maximum production by opencast mining shall not exceed beyond that for which environmental clearance has been granted for the 5 mine of Cluster- II as below:

S.No	Mines in Cluster II	Normative Prod. Capacity (MTPA)	Peak Prod. Capacity (MTPA)
1	Block II Colliery OC & UG Mine	4.45	5.785
2	Jamunia OCP	1.20	1.56
3	Shatabdi OCP	1.40	1.82
4.	Muraidih Colliery (OC & UG Mine)	5.50	7.15
5	Phularitand OCP	3.00	3.90
	Total	15.55	20.215

- (ii) The measure to identify in the Environmental Plan for Cluster- II 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

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- 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 II shall be undertaken. Expertise available internationally could also be utilised 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.
 - (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 -II should be sent 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 whole cluster will be 484.89Mm³. OB from 3 OCP and 2 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-II 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. A total area of 1237.48ha shall be reclaimed and afforested.
 - (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 area and relevant for Cluster- II shall be implemented.
 - (xv) The locations of monitoring stations in the Jharia Coalfields should be finalised 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.

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- (xvi) The Transportation Plan for conveyor-cum-rail for Cluster-II 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.
- (xvii) R&R of 1137 nos of PAF's involved. They should be rehabilitated at cost of Rs 45.08 Crores as per the approved Jharia Action Plan.
- (xviii) 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 piezometers. 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.
- (xix) 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.
- (xx) 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.
- (xxi) High root density tree species shall be selected and planted over areas likely to be affected by subsidence.
- (xxii) Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.
- (xxiii) Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.
- (xxiv) No depillaring operation shall be carried out below the township/colony.
- (xxv) A detailed CSR Action Plan shall be prepared for Cluster II group of mines. Specific activities shall be identified for CSR for the budget of Rs 77.50 Lakhs per year @ Rs 5/T of coal provided for CSR for 2012-2013 and Rs. 5/T of coal as recurring expenditure. The 416.98 ha of area within Cluster II 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. In addition to afforesting 1237.48 ha of area at the post-mining stage, the 122.18 ha of fallow/abandoned land and 416.98 ha waste land/barren land within Cluster-II mining lease area shall be rehabilitated/reclaimed as forest/agricultural land under CSR Plan in consultation with 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.
- (xxvi) Details of transportation, CSR, R&R and implementation of environmental action plan for the clusters-II should be brought out in a booklet form within a year and regularly updated.
- (xxvii) 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.
- (xxviii) 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

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- 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.
- (xxix) 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.
 - (xxx) 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 piezometers. 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.
 - (xxxi) ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to conform to prescribed standards in case discharge into the natural water course
 - (xxxii) The location of monitoring stations in the Jharia coalfield should be finalized in consultation with Jharkhand State Pollution Control Board.
 - (xxxiii) 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.
 - (xxxiv) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five years 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.
 - (xxxv) A separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.
 - (xxxvi) 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

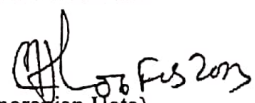
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- sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.
- (iv) Data on ambient air quality (PM₁₀, PM_{2.5}, SO₂ and NO_x) and heavy 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/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 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

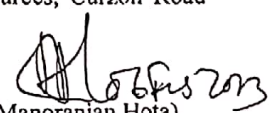
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- be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.
- (xvii) The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental 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
4. The Ministry or any other Competent Authority may stipulate any further condition(s) for environmental protection.
 5. 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.
 6. 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.
 7. 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.


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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, Chandrashekarpur, Bhubaneshwar - 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


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