

**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 GENERAL MANAGER

BARORA AREA

Ref No.GM/AR-1/SURVEY/ /2017

Dated: - 04.05.17

To  
The Director  
Ministry of Environment, Forest & CC  
Regional Office(ECZ), Bungalow No.-2  
Shyamali Colony  
Ranchi- 834002

SUB: Six monthly reports on implementation of Environmental measures for the period from Oct '16 to March'17 in respect of Cluster -XV groups of mines.

Ref:-EC Order No. J-11015/100/2011-1A.II (M)

Dear Sir,

Kindly find enclosed herewith the six monthly report on implementation of Environmental measures for the period from Oct '16 to March'17 in respect of Cluster -XV groups of mines.

Hope you will find the same in order.

Yours faithfully,

General Manager  
Barora Area

24/4/17

Encl: as above

C.C.10

1. The Director, 1A monitoring cell  
Paryavaran Bhawan CGO Complex, New Delhi-110003
2. G.M.(Env.) BCCL Koyla Bhawan, Dhanbad.
3. Nodal incharge (Env.) Barora Area.
4. Nodal incharge (Env.) Govindpur Area.



**ENVIRONMENTAL CLEARANCE COMPLIANCE OF CLUSTER-XV**

**(GRANTED VIDE J-11018/100/2011-IA.II (M) Dated 16.12.2013)**

**From Oct. '2016 to March' 17**

**Action Plan for compliance of EC conditions**

SN	A. Specific Conditions by MOEF:				Compliance	
i	The maximum production in the cluster shall not exceed beyond that for which environmental clearance has been granted for Cluster -XV as per given below:				The production from the cluster is within the limit for which Environmental clearance has been granted.	
	Sl. No	Name of Mines	Production capacity (MTY)			Lease hold area (Ha.)
			Normative	Peak		
	1	Kharkharee Coll.	0.092	0.12		584.00
	2	Madhuband coll.	0.113	0.147		393.77
	3	Phularitand coll.	0.120	0.156		340.88
	4	Dharmabandh coll.(Closed for production)	0	0	377.90	
		Total	0.325	0.423	1696.55	
ii	The proponent shall prepare a contingency plan for subsidence.				It is being complied as per the guidelines of DGMS.	
iii	Keeping in view the pattern of the subsidence in the area, no depillaring should be carried out until the rehabilitation of the affected families and shifting of infrastructure.				It shall be complied. No depillaring is being carried out at present.	
iv	The channels adjoining the ML area leading to Jamunia river should not be disturbed and be regularly desilted.				It is being complied.	
v	The quality of the Jamunia river water should be continuously monitored and in order to prevent silting, a series of check dams should be constructed using boulders. This will help in recharging the ground water.				It is being complied.	
vi	The coal from the mines will be transported by mechanically covered trucks within two months.				Conversion of existing truck into mechanically covered trucks in a phased manner has been taken up. Presently, transportation is being done by covering vehicle with tarpaulin.	
vii	In underground mining there is presence of organic gases. These gases are volatile in nature. Due to transmission of air, fire takes place. The routine mining engineering will not serve the purpose. Therefore, proper studies are carried out to understand underground seams and how these fire areas should be sealed from further spreading.				All the statutory provisions under mines act 1952 and CMR 1957 along with statutes constituted under Mines act are fully complied to prevent any occurrence of fire Regular monitoring and inspection is done by DGMS	
viii	Preventive impact of fire and gases for all the coal mines in Jharia Coal field is carried				It is being complied. Presently Master Plan approved by Govt. of India is under	



		implementation for this purpose. Fire control in Jharia and its periphery is being done with the recommendation received from CIMFR. An international expression of interest had been invited by BCCL and two bidders submitted their proposals, work shall be awarded as per the recommendation of tender committee.
IX	National Remote Sensing Agency (NRSA) should be contacted for thermal imaging techniques which are being utilized for assessing the extent of impact of underground of fire. BCCL should consider for an MOU with NRSA for short and long term studies so as to obtain detailed information on Satellite imagery, thermal imagery, subsidence prediction and surface features of the mining area.	A Global EOI was floated to control fire in Jharia Coalfield. None of the bidder qualified. CIMFR, Dhanbad has been requested to take up the study. NRSA has also been contacted to prepare time-series map for monitoring of fire. NRSA will soon start the work.  Fire affected area has been reduced from 9.00 KM <sup>2</sup> to 2.18 KM <sup>2</sup> . For further dealing of fire and subsidence action has been taken and working as per the strategic plan of digging out of fiery coal followed by reclamation.
X	The Project proponent should monitor the water quality of the Jamunia river as per the standards prescribed by the JSPCB/CPCB to maintain the required BOD in the river water.	Work of monitoring ambient environment including water quality of the Jamunia river is being done by CMPDIL, Ranchi.
XI	The nullah as adjacent to the river should not be disturbed.	It is being complied.
XII	The open cast quarries of the abandoned mines should be backfilled to the ground level and restored with native species.	It is being complied.
XIII	All coal from the smaller U/G mines should be transported by high capacity and mechanically covered trucks/tippers.	It shall be complied. Coal transportation is being done by Tarpaulin covered trucks.
XIV	Green belts shall be developed on both sides of the roads.	Due to absence of permanent roads in the coalfield, avenue plantation couldn't be done but trees were planted near permanent structures to minimize the pollution.
XV	Action plan for quenching of fires and rehabilitation along with the details of master plan be submitted to MOEF for monitoring purpose.	It is being complied. The approved master plan is uploaded on BCCL website ( <a href="http://www.bccl.gov.in/PDFs/MPLANBCCL-2008.pdf">www.bccl.gov.in/PDFs/MPLANBCCL-2008.pdf</a> ) and regular monthly progress report is being sent to ministry.
XVI	Presently coal of Munidih washery from other mines of the cluster is taking place through NII. An alternate route for coal transportation may be explored.	Jharia Coalfield is a densely and highly populated region. Alternative route will further add pollution and rehabilitation problems. It may be explored only after the shifting of population, living in coalfield region.
XVII	For understanding the composition of emissions from coal mine fires, BCCL may initiate action as proposed in the visit report of the EAC to Dhanbad.	BCCL has initiated the process to conduct source apportionment study for entire region of JCF. A work has been awarded to CMPDIL, Ranchi.
XVIII	The approved mining plan is submitted to the	Most of the BCCL mines are taken over mines

MOEF.

from the erstwhile private owners who were operating mines without mine plans at the time of nationalization and now are being operated as amalgamated collieries/quarries as per the guide lines of DGMS.

IX	The measure to identify in the Environmental Plan for Cluster- XV groups of mine and the conditions given in this environmental clearance letter shall be dovetailed to the implementation of the Jharia Action Plan.	It is being complied.
X	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 XV 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. Isothermal mapping using thermal imaging has been got done by NRSA. Measures would be taken prevent ingress of air (Ventilation) in such areas, which may restart fresh fires.	A Global EOI was floated to control fire in Jharia Coalfield. None of the bidder qualified. CIMFR, Dhanbad has been requested to take up the study. NRSA has also been contacted to prepare time-series map for monitoring of fire. NRSA will soon start the work.  Fire affected area has been reduced from 9.00 KM <sup>2</sup> to 2.18 KM <sup>2</sup> . For further dealing of fire and subsidence action has been taken and working as per the strategic plan of digging out of fiery coal followed by reclamation. Action is being taken as specified in EC and as per Jharia Master Plan. Further fire patches are under operation to dig out the fiery coal and combustible materials to save the coal from burning and to stop further spread of the fire. Once the fiery coal is dug-out/excavated there will be no more chance of re-starting of fresh/spreading of fire into other areas.
XI	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 stabilized with plantation so as to withstand the peak water flow and prevent mine inundation.	It is being complied.
II	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.	It is being complied. Action is being taken to control, mine fires including old OB dump areas as specified in Jharia Master Plan and the mining is being done as per the guidelines and permissions of Directorate General of Mines Safety (DGMS).
III	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 riparian water bodies.	It is being complied. Mining is being carried out as per the guidelines of DGMS.
IV	Total afforestation plan shall be implemented covering an area of 621.28 Ha. (Additional) at the end of mining which will include, Green belt over	It shall be complied. In 2013, around 2.50 Ha of land taken up for eco restoration of degraded



	an area of 229.12 Ha., density of tree plantation 2500/Ha. Of plants.	land in Phularitand colliery.
V	Details of transportation, CSR,R&R and implementation of environmental action plan for the clusters XV should be brought out in a booklet from within a year and regularly updated.	It is being followed. CSR dept has been established at area level. This year BCCL has constructed over 3500 toilets under "Swacch Bharat Abhiyan".(CSR DATA ENCLOSED)
VI	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- XV shall be implemented	Dhanbad Action Plan has been prepared in consultation with Jharkhand Pollution Control Board for entire BCCL. It is being implemented comprehensively for all the mines of BCCL. Some of the salient actions of this cluster are as under: <ol style="list-style-type: none"> <li>1. Construction of pucca road.</li> <li>2. Construction of water reservoir for mine water utilization</li> <li>3. Plantation.</li> <li>4. Covered transportation.</li> </ol>
XVII	The locations of monitoring stations in the Jharia coalfield should be finalized in consultation with Jharkhand State Pollution Control Board. Committee stated that smoke/dust emission vary from source to source (fuel wood, coal, fly ash 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 (PM <sub>10</sub> and PM <sub>2.5</sub> ) 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.	Establishment of ambient environment quality monitoring stations has been finalized with the consultation of Jharkhand State Pollution Control Board. The work of monitoring of ambient environment was done by Central Institute of Mining & Fuel Research (CIMFR), Dhanbad which is a CSIR laboratory recognized under the EP Rules. Now the monitoring work has been taken up by CMPDIL, Ranchi. Tender for source apportionment study has been cancelled 2 times as no bidder has qualify for the same. Now Proposal is being made for the same study by any government institution.
II	The proponent will continue the existing Road-Rail transport network system in view of the implementation of the Master Plan (For 10 years) and another 5 Years gestation period after the completion of Master Plan for consolidation of the backfilled dug out fire areas and unstable areas is required. All mitigation measures (like covered trucks, green beltting on either sides of the roads, enhanced water sprinkling, strengthening and maintaining the roads etc.) shall be adopted up to 15 years (phase-I) with the existing Road- Rail transport system. In phase II, BCCL shall implement conveyor-cum-rail transport to avoid movement of trucks within the cluster for coal transportation in phase II which shall start after 15 years. Transportation of coal shall be by Rail and Conveyor belt, minimizing the existing road	At present we are exploring the technology to cover existing trucks mechanically by local technicians and no OEM is available for covered trucks in Indian market until the coal production is being done by tarpaulin covered trucks

	transport system in all the mines of the cluster and shall continue after 15 years. Loading of coal by pay loaders shall be discontinued. Adequate number suitably designed off-take points shall be provided.	
XIX	1537 nos. of PAFs should be rehabilitated at cost of Rs.140.03 crores as per the approved Jharia Action Plan.	It is being complied as per approved Jharia Action Plan.
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.	It shall be complied. No depillaring is being carried out at present.
XXI	Coal Extraction shall also be optimized in areas where agricultural production is continuing. Some pillars shall be left below the agricultural land. No depillaring & coal extraction should be carried out below habitation, H.T Lines & beneath road, water bodies.	It is being complied.
XXII	Subsidence shall be monitored closely and if subsidence is found exceeding the permitted limits, then the land owners shall be adequately compensated with mutual agreement with the land owners.	No depillaring is being carried out at present.
XXIII	3-tiers plantation should be developed 2KM stretch of road from the mine using native species.	It is being complied.
XXIV	Water sprinkling system shall be provided to check fugitive emission from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.	It is being complied.
XXV	A progressive afforestation plan shall be prepared and implemented over the mine lease area acquired and shall include areas under green belt development, areas along roads infrastructure, along ML boundary and township etc, by planting native species in consultation with the local DFO/Agricultural Department.	It is being complied. In 2013, around 2.50 Ha of land taken up for eco restoration of degraded land in Phularitand colliery.
XXVI	Acid water Treatment Plant, volume of water to be treated and disposal of brine should be provided.	Shall be complied.
XXVII	Mine discharge water outside the ML shall be monitored, particularly for TDS and treated to confirm prescribed levels before discharge into the natural environment.	Mine discharge water is being allowed to settle down in the mine sumps before disposal into storage reservoirs. The monitoring of water quality parameters is being done through CMPDIL, Ranchi and parameters are well within the prescribed limit provided by CPCB.
XXVIII	The Company shall put up artificial groundwater recharge measures for augmentation of ground water resource, incase water table shows a declining	Presently water is not being discharged outside the ML. Excess mine water is being stored at old quarries and ponds for community use. This will help to recharge the ground water.



	trend. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mines.	
XXXX	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 disease and hearing impairment, if any, through an agency such as NIOH, Ahmedabad within a period of one year and the results reported to this Ministry and to DGMS.	NIOH has conducted health surveillance (Medical checkup) and awareness program in area. (Report awaited).
xi	The mining in the existing mines would be phased out after expiry of the current mining lease and after reclamation of mined over area. The operating mines may be analyzed and monitored for compliance of conditions, having bearing with movement of wild life until such time they are closed/phased out.	Shall be complied.
xii	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.	It is being complied.
xiii	High root density tree species shall be selected and planted over likely areas to be affected by subsidence.	it is being complied.
xiii	Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.	It is being complied.
xliv	Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.	It is being complied.
xiv	The CSR Action Plan shall consist of need-based CSR Action Plan, CSR Auditing and monitoring mechanism etc. The proponent will spend 5% of the retained earnings of the previous year subject to a minimum of Rs.5/- per tonne of coal production which should be adjusted as per the annual inflation. The progress made there on shall be uploaded on the company website. Monitoring of the impact of the activities under CSR shall be carried out periodically	It is being complied.
xvi	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. The gap/space available between the entire mine area	BCCL is implementing CSR activities. A separate CSR committee has been formed at area level of Barora, who will look after the works being executed under CSR. CSR dept is established at the Headquarter level and area level for Executing the CSR Activities.  All welfare/ CSR activities are also uploaded in Company web site

	should be suitably planted with native species. Plantation should also be made in vacant area and along the road side so as to reduce dust pollution.	TISS has conducted survey to frame CSR policy for better implementation and monitoring of the CSR activities.
Ivii	Central recreation park with herbal garden should be developed for use of all inhabitants.	It shall be complied.
Iviii	The mine water should be treated properly before supply to the villager.	It is being complied.
Ilix	Mine discharge water shall be treated to meet standards prescribed standards before discharge into natural water courses/agriculture. The quality of water discharge shall be monitored at the outlet and proper records maintained thereof and uploaded regularly on the company website.	A work order has been issued to CMPDIL, Ranchi. Regular monitoring of Water Quality Parameters is being carried out by CMPDIL.
	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 stabilized 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.	It shall be complied.
	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.	Groundwater level and quality is being regularly monitored by CMPDIL. The Location and design of Piezometers to be installed have been finalized by CMPDIL. A proposal for award of work of construction of new piezometers has been prepared and scheme has been approved by competent authority. The work will soon be tendered and will start shortly
	ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to conform to prescribe standards in case discharge into the natural water course	Construction of ETP Oil grease Trap will be taken-up
	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 Dhanbanswar.	Being complied. Presently a time series map of vegetation cover in the Jharia Coal Field is being carried out through CMPDIL, Ranchi using satellite imagery for every 3 years the last map of the year 2010-11 has been uploaded on the official website of company. Further CMPDIL has been requested to prepare "Time series of land use maps based on satellite imagery of the core zone and buffer zone in the scale 1:5000.



1

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. The mining plan and post-mining plan, closure plan should be prepared and submitted to the Ministry.

CMPDIL, Ranchi has prepared "Final Mine Closure Plan along with a Plan for Habitat Restoration and with details of Corpus Fund"

iv

A separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.

A full-fledged Environment Department, headed by a HoD (Environment) along with a suitable qualified multidisciplinary team of executives (15 nos.) which includes Environment, Mining, Excavation, Civil, Survey, Electrical & mechanical, Forestry disciplines executives and technicians (4 nos.) has been established in Headquarters. They are also trained in ecological restoration, sustainable development, rainwater harvesting methods etc. At the project level one Executive in each area has also been nominated as Project Nodal Officer (Environment) and is also entrusted with the responsibility of compliance and observance of the environmental Acts/Laws including environment protection measures. The activities are monitored on regular basis at Area and at Head quarters levels. GM (Environment) at head quarter level, co-ordinates with all the Areas and reports to the Director (Technical) and in turn he reports to the CMD of the company.

The team is multidisciplinary and very much motivated under the guidance of company's Director (Technical) and CMD. Further capacity building at both corporate and operating level is being done.

vi

**Corporate Environment Responsibility:**

a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.

A well defined Corporate Environment Policy has already been laid down and approved by Board of Directors. This is also posted on BCCL website  
Complied.

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.	A hierarchical system of the company to deal with environmental issues from corporate level already exists.
	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	Being complied.
	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.	Being complied.
3	<b>General Conditions by MoEFCC:</b>	
	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	Being complied.
i	No change in the calendar plan of production for quantum of mineral coal shall be made.	Being complied.
iii	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for $PM_{10}$ , $PM_{2.5}$ , $SO_2$ 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.	The location of monitoring stations in Jharia Coal Field has been finalized in consultation with the Jharkhand State Pollution Control Board. Ambient air quality is regularly monitored by CMPDIL, Ranchi
iv	Data on ambient air quality ( $PM_{10}$ , $PM_{2.5}$ , $SO_2$ and $NO_x$ , 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 recognized under the EPA rules, 1986 shall be furnished as part of compliance report.	It shall be complied.
v	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operation of HEMM, etc shall be provided	It is being Complied in mines and also the Noise levels are below the Ambient Noise Standard (Day time 75 dB & Night Time 70 dB for Industrial Area).




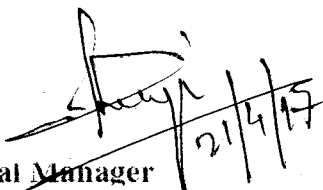
	with ear plugs/muffs.	
vi	Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 <sup>th</sup> May 1993 and 31 <sup>st</sup> December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	The work of monitoring of ambient environment is being done through CMPDIL, Ranchi which is having laboratory recognized under the EP Rules.
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.	Being done. Transporting of coal is being done 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 analyzed through a laboratory recognized under EPA Rules, 1986.	The work of monitoring of environment quality parameters has been awarded to CMPDIL, Ranchi. They have started the work in full fledge.
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.	It is being complied. A separate full-fledged Human Resource Development Department is conducting regular training programme on these issues. Apart from this Vocational Training Centers are existing in all the areas of BCCL, which provides periodical training on the safety and occupational health issue to each of the workers working in the mines.
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	Initial Medical Examination (IME) and Periodical Medical Examination (PME) of all the personnel is carried out as per the Statutes and Director General of Mines Safety (DGMS) guideline
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.	A full-fledged Environment Department, headed by a HoD (Environment) along with a suitable qualified multidisciplinary team of executives (15 nos.) which includes Environment, Mining, Excavation, Civil, Survey, Electrical & mechanical, Forestry disciplines executives and technicians (4 nos.) has been established in Headquarters. They are also trained in ecological restoration, sustainable development, rainwater harvesting methods etc. At the project level, one Executive in each area has also been nominated as Project Nodal Officer

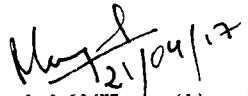
		<p>(Environment) and is also entrusted with the responsibility of compliance and observance of the environmental Acts/Laws including environment protection measures. The activities are monitored on regular basis at Area and at Head quarters levels. GM (Environment) at head quarter level, co-ordinates with all the Areas and reports to the Director (Technical) and in turn he reports to the CMD of the company.</p> <p>The team is multidisciplinary and very much motivated under the guidance of company's Director (Technical) and CMD. Further capacity building at both corporate and operating level is being done.</p>
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.	It is being complied.
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 <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	Complied.
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.	Complied.
xv	A copy of the environmental clearance letter 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	Complied.
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 as bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical	Complied.

pollutant such as PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> (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.	Being complied.
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.	Project authority is ready to extend its full cooperation for any kind of visit and inspection conducted by Regional Office in connection with EC Conditions Compliance.
xix	The Environmental statement for each financial year ending 31 March in Form-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 company's website along with the status of compliance of Environment condition and shall be sent to the respective Regional Offices of the MOEF by e-mail.	Environmental Statement (Form-V) has been regularly submitted for each financial year to Jharkhand State Pollution Control Board.

  
Nodal Officer (Env.)  
Barora Area

  
General Manager  
Barora Area

  
Nodal Officer (Env.)  
Govindpur Area

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**ENVIRONMENTAL MONITORING REPORT  
OF  
BHARAT COKING COAL LIMITED,  
CLUSTER – XV**

**(FOR THE Q.E. DEC, 2016)**

**E. C. no. J-11015/100/2011-IA.II (M) dated 16.12.2013.**

**March, 2017**



**CMPDI**

ISO 9001 Company  
Regional Institute-II  
Dhanbad, Jharkhand

## EXECUTIVE SUMMARY

### 1.0 Introduction

The purpose of environmental monitoring is to assess the quality of various attributes that affects the fauna and flora. In accordance with the quality of these attributes appropriate strategy is to be developed to control the pollution level within the permissible limits. The three major attributes are air, water and noise level.

Bharat Coking Coal Limited (BCCL), a Subsidiary company of Coal India Limited is operating Underground and Opencast Mines in Jharia Coalfield (JCF) is a part of Gondwana Coalfields located in Dhanbad district of Jharkhand, the JCF is bounded by 23°37' N to 23°52' N latitudes and 86°09' E to 86°30' E longitude occupying an area of 450 Sq.km. BCCL has awarded Environmental monitoring work of Jharia Coalfield (JCF) to Central Mine Planning & Design Institute Limited (CMPDIL). The environmental monitoring has been carried out as per the conditions laid down by the MoEFCC while granting environmental clearance of project, consent letter issued by the respective SPCB, and other statutory requirements.

### 2.0 Sampling location and rationale

#### 2.1 Ambient air sampling locations

The ambient air quality monitoring stations were selected to represent core, buffer zone area. The rationale has been based on the guidelines stipulated by MoEFCC, consent letter of SPCB, as well as other statutory requirements.

#### 2.2 Water sampling stations

The Water sampling stations were selected for mine sump water, drinking water supply, well/ Hand pump water also surface water samples.

#### 2.3 Noise level monitoring locations

Noise levels vary depending on the various activities in mining areas. The monitoring of noise level in different locations will be helpful to take appropriate mitigating measures. The noise levels were recorded in mining area, washray and in residential area.

### 3.0 Methodology of sampling and analysis

#### 3.1 Ambient air quality

Parameters chosen for assessment of ambient air quality were Particulate Matter (PM<sub>10</sub>), Fine Particulate Matter (PM<sub>2.5</sub>), Sulphur Di-oxide (SO<sub>2</sub>) and Nitrogen Oxides (NO<sub>x</sub>). Respirable Dust Samplers (RDS) and Fine Dust Sampler (PM<sub>2.5</sub> sampler) were used for sampling of PM<sub>10</sub>, SO<sub>2</sub>, & NO<sub>x</sub> and Fine Dust Sampler (PM<sub>2.5</sub> sampler) were used for sampling of PM<sub>2.5</sub> at 24 hours interval once in a fortnight and the same for the gaseous pollutants. The samples were analysed in Environmental Laboratory of CMPDI, RI-I, Asansol.

### **3.2 Water quality**

Water samples were collected as per standard practice. The effluent samples were collected and analysed for four parameters on fortnightly basis. The ground and Surface water samples were collected and analysed for 25 and 17 parameters respectively, on quarterly basis. Thereafter the samples were preserved and analysed at the Environmental Laboratory at CMPDI (HQ), Ranchi.

### **3.3 Noise level monitoring**

Noise level measurements in form of 'Leq' were taken using Integrated Data Logging Sound Level Meter. Noise levels were measured in Decibels, 'A' weighted average, i.e. dB(A).

## **4.0 Results and interpretations**

### **4.1 Air quality**

It has been seen from the analysis results that the 24 hours average concentration parameters like PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> are mostly within the permissible limits in all sampling locations as per MoEFCC Gazette Notification No. GSR 742(E) dt 25.09.2000 Standards for Coal Mines and National Ambient Air Quality Standard -2009. Sometimes the concentration of PM<sub>10</sub> & PM<sub>2.5</sub> exceeds the limits due to heavy public traffic, poor road condition, coke oven plants, burning of coal by surrounding habitants, brick making, municipal waste dumps and industries like Steel Plant, thermal Plants including their fly ash etc.

### **4.2 Water quality**

The test results indicate that the major parameters compared with MoEFCC Gazette Notification No. GSR 742(E) dt 25.09.2000 Standards for Coal Mines, IS.10500/2012 (Drinking water) and IS: 2296 (Surface water), are within permissible limits.

### **4.3 Noise Level**

During the noise level survey it has been observed that the noise level in the sampling locations is within the permissible limits prescribed as per MoEFCC Gazette Notification No. GSR 742(E) dt 25.09.2000 Standards for Coal Mines for Industrial Area and Noise pollution (Regulation and Control) Rules, 2000.



## CHAPTER-II

### AMBIENT AIR QUALITY MONITORING

#### 2.1 Location of sampling station and their rationale:

(as per G.S.R. 742 (E) dt. 25th December, 2000)

##### 2.1.1 Ambient Air Quality Sampling Locations

##### I. CORE ZONE Monitoring Location

###### i) Kharkharee CISF Office (A21): Industrial Area

The location of the sampling station is 23°48.249'N 086°14.717'E. The sampler was placed at a height of approx. 1.5m above ground level at Project Office.

###### ii) Madhuband UGP Office (A33): Industrial Area

The location of the sampling station is 23°45'24.48" N 086°11'59.44"E. The sampler was placed at a height of approx. 1.5m above ground level at Project Office.

##### II. BUFFER ZONE Monitoring Location

###### i) Block IV Kooridih OCP (A6): Industrial Area

The location of the sampling station is 23°47'21.717" N 086°13'37.75"E. The sampler was placed at a height of approx. 1.5m above ground level at Safety Office.

###### ii) Lohapatti (A20): Industrial Area

The location of the sampling station is 23°44'18.93" N & 086°13'37.75"E. The sampler was placed at a height of approx. 1.5m above ground level at Safety Office.

#### 2.2 Methodology of sampling and analysis

Parameters chosen for assessment of ambient air quality were Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Sulphur di-oxide (SO<sub>2</sub>) and Nitrogen oxides (NO<sub>x</sub>). Respirable Dust Samplers (RDS) & fine particulates for PM<sub>2.5</sub> sampler were used for sampling PM<sub>10</sub> & PM<sub>2.5</sub> respectively at 24 hours interval once in a fortnight and the same for the gaseous pollutants. The samples were analysed in Environmental Laboratory of CMPDI, RI-I, Asansol.

#### 2.3 Results & Interpretations

The results of Ambient Air Quality are presented in tabular form along with Bar chart for each monitoring station. The interpretations of different parameters are given below:

### 2.3.1 Ambient air quality

#### Particulate Matter PM<sub>10</sub>

In **core zone** under **Industrial area** varies from 67 to 93  $\mu\text{m}^3$   
In **buffer zone** in **Industrial area** varies from 69 to 89  $\mu\text{m}^3$

#### Particulate Matter PM<sub>2.5</sub>

In **core zone** under **Industrial area** varies from 34 to 47  $\mu\text{m}^3$   
In **buffer zone** in **Industrial area** varies from 39 to 49  $\mu\text{m}^3$

#### Sulphur Dioxide:

In **core zone** under **Industrial area** varies from 10 to 12  $\mu\text{m}^3$   
In **buffer zone** in **Industrial area** varies from 11 to 13  $\mu\text{m}^3$

#### Oxides of Nitrogen:

In **core zone** under **Industrial area** varies from 24 to 28  $\mu\text{m}^3$   
In **buffer zone** in **Industrial area** varies from 22 to 25  $\mu\text{m}^3$

## AMBIENT AIR QUALITY DATA

Name of the Company: **Bharat Coking Coal limited**

Year : **2016-17.**

Name of the Cluster : **Cluster – XV**

Q.E.: **Dec 2016**

Station Code/Name: **(a) A21 Kharkharee CISF Office**

Category:

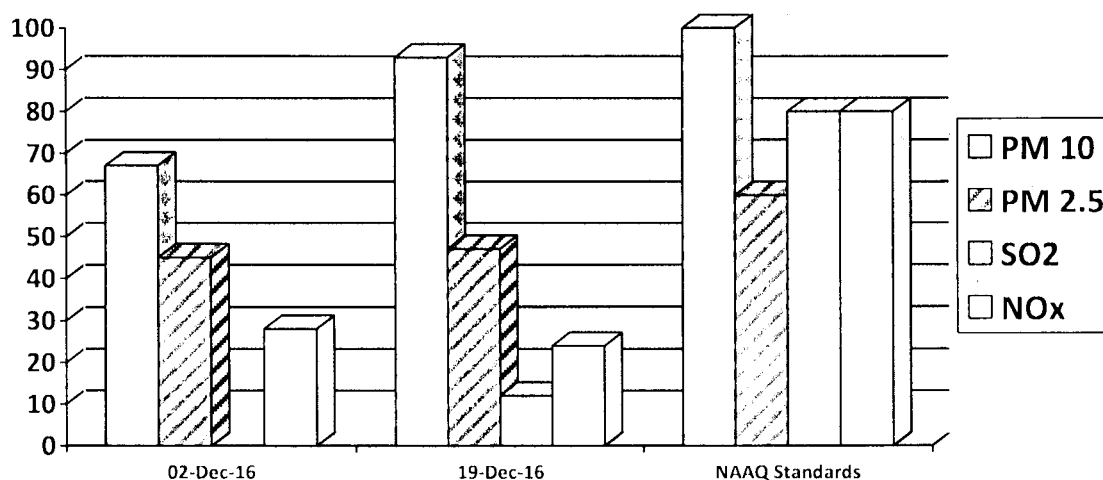
**(b) A33 Madhuband UGP Office**

**Industrial<sup>1</sup>.**

**ZONE: Core**

**(a). Station Code/Name: A21- Kharkharee CISF Office Category: Industrial.**

Sl. No.	Dates of sampling	PM 10	PM 2.5	SO2	NOx
1	02 - Dec -16	67	45	<10	28
2	19 - Dec - 16	93	47	12	24
NAAQ Standards		100	60	80	80

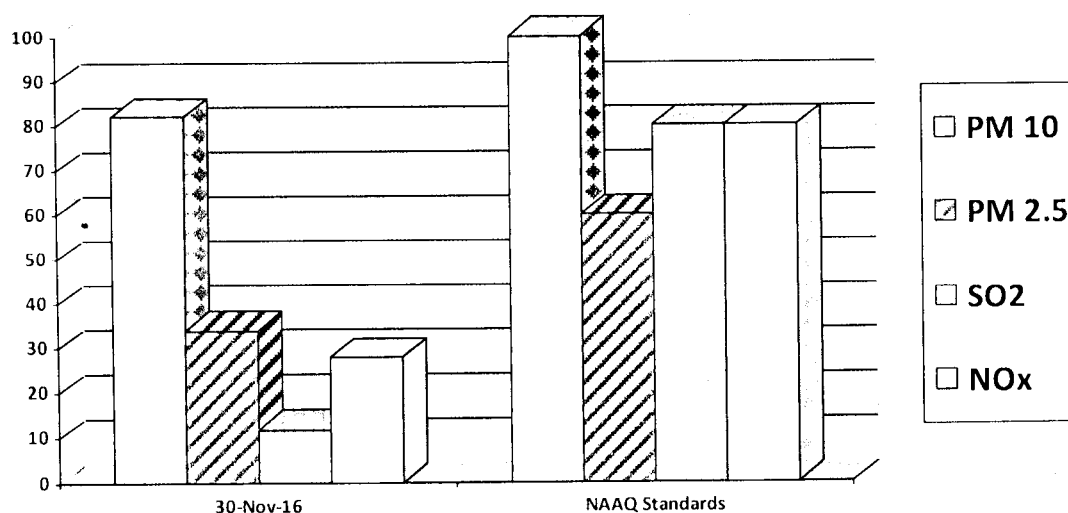


**Note:**

- All values are expressed in microgram per cubic meter
- 24 hour duration.

(b). Station Code/Name: A33- Madhuband UGP Office Category: Industrial<sup>2</sup>.

Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	30 - Nov -16	82	34	12	28
NAAQ Standards		100	60	80	80



**Note:**

- All values are expressed in microgram per cubic meter.
- 24 hour duration.

## ➤ AMBIENT AIR QUALITY DATA

Name of the Company: **Bharat Coking Coal limited**

Year : **2016-17.**

Name of the Cluster : **Cluster – XV**

Q.E.: **Dec 2016**

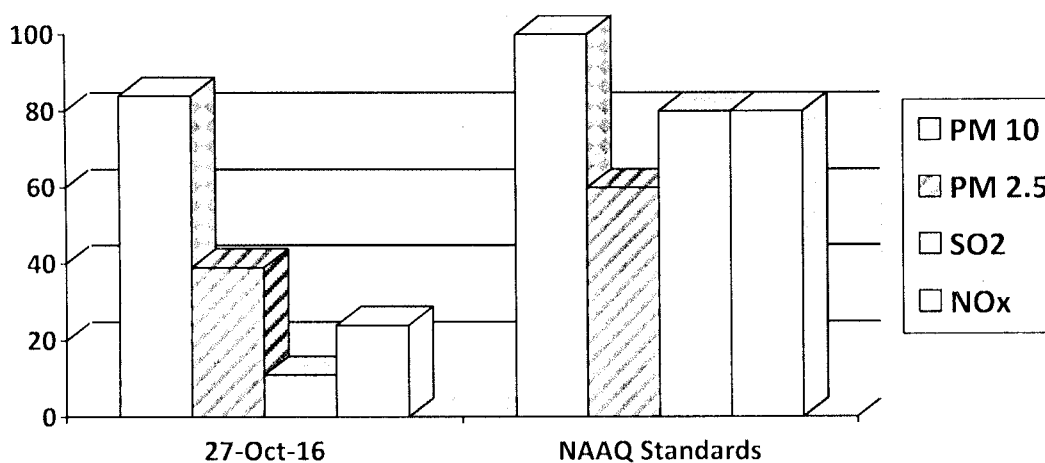
Station Code/Name: (a) **A6 Block IV Kooridih OCP**  
(b) **A20 Lohapatti**

Category:  
**Industrial<sup>3</sup>.**

ZONE: **BUFFER**

(a). Station Code/Name: **A6 – Block IV Kooridih OCP, Category: Industrial.**

Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	27 - Oct-16	84	39	11	24
	NAAQ Standards	100	60	80	80

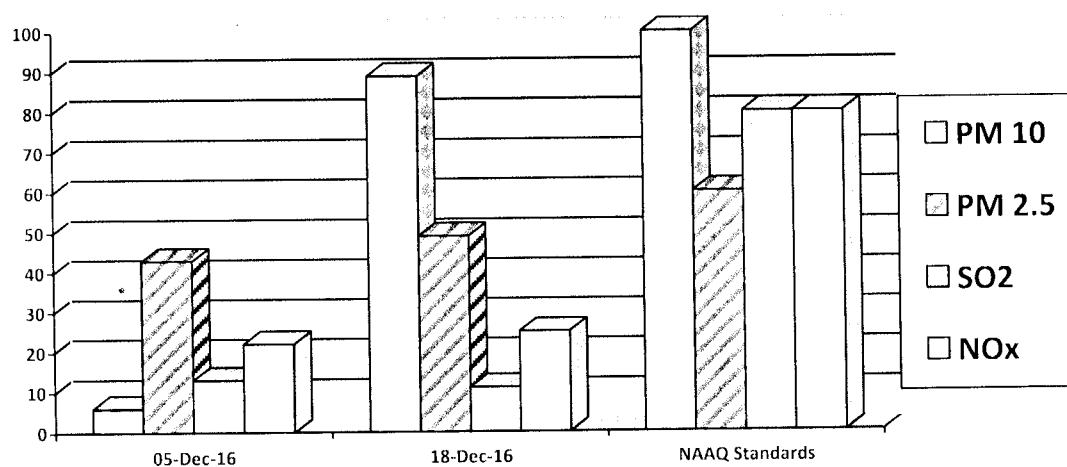


### Note:

- All values are expressed in microgram per cubic meter.
- 24 hour duration.

(b). Station Code/Name: A20- Lohapatti, Category: Industrial<sup>4</sup>.

Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	05 - Dec -16	69	43	13	22
2	18 - Dec- 16	89	49	11	25
	NAAQ Standards	100	60	80	80

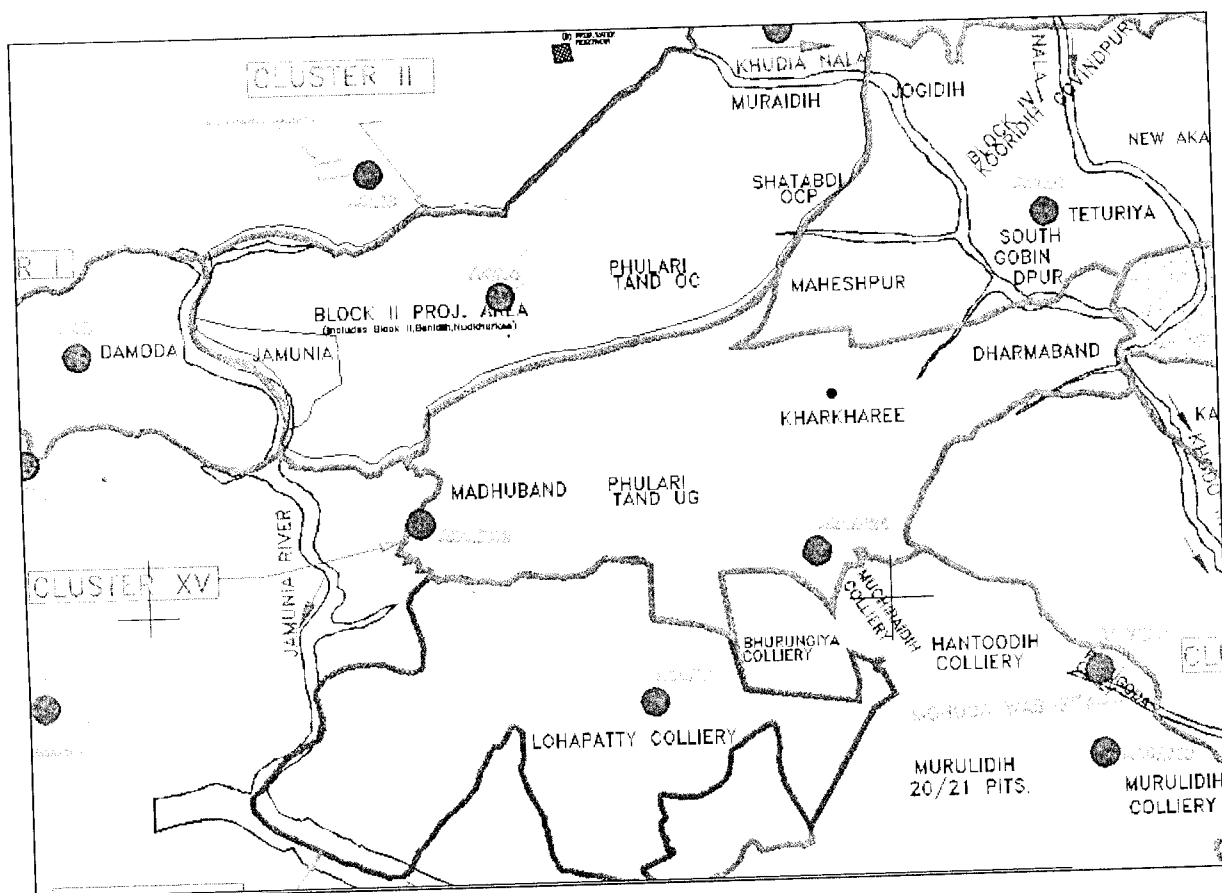


**Note:**

- All values are expressed in microgram per cubic meter.
- 24 hour duration.

<sup>4</sup> Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol. Signed.....Dated 22.02.2017. Job No. 110310  
Job No. 200316028

## Ambient Air Monitoring Stations in Cluster- XV in Core & Buffer Zones



**Ambient Air Quality Standards for Jharia Coal Field**  
**As per the Environment (Protection) Amendment Rules, 2000 notified vide**  
**notification G.S.R. 742(E), dated 25.9.2000.**

Category	Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4	5
<b>III</b> Coal mines located in the coal fields of <ul style="list-style-type: none"> <li>• Jharia</li> <li>• Raniganj</li> <li>• Bokaro</li> </ul>	Suspended Particulate Matter (SPM)	Annual Average *  24 hours **	500 $\mu\text{g}/\text{m}^3$  700 $\mu\text{g}/\text{m}^3$	- High Volume Sampling (Average flow rate not less than 1.1 $\text{m}^3/\text{minute}$ )
	Respirable Particulate Matter (size less than 10 $\mu\text{m}$ ) (RPM)	Annual Average *  24 hours **	250 $\mu\text{g}/\text{m}^3$  300 $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter sampling and analysis
	Sulphur Dioxide ( $\text{SO}_2$ )	Annual Average *  24 hours **	80 $\mu\text{g}/\text{m}^3$  120 $\mu\text{g}/\text{m}^3$	1.Improved west and Gaeke method 2.Ultraviolet fluorescene
	Oxide of Nitrogen as $\text{NO}_2$	Annual Average *  24 hours **	80 $\mu\text{g}/\text{m}^3$  120 $\mu\text{g}/\text{m}^3$	1. Jacob & Hochheiser Modified (Na-Arsenic) Method 2. Gas phase Chemiluminescence

**Note:**

\* Annual Arithmetic mean for the measurements taken in a year, following the guidelines for frequency of sampling laid down in clause 2.

\*\* 24 hourly / 8 hourly values shall be met 92% of the time in a year. However, 8% of the time it may exceed but not on two consecutive days.



## CHAPTER – III

### WATER QUALITY MONITORING

#### 3.1 Location of sampling sites

(Refer Plate No. - II)

- i) **Mine Discharge of Kharkharee UGP (MW15)**  
A sampling point is fixed to assess the effluent quality of Mine discharge. This location is selected to monitor effluent discharge in to Khudia Nala.
- ii) Ground Water quality at **Kharkharee (GW15)**
- iii) Surface Water quality at **U/S of Khudia Nala (SW5)**
- iv) Surface Water quality at **D/S of Khudia Nala (SW32)**

#### 3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analysed for four parameters on fortnightly basis. The ground and Surface water samples were collected and analyzed for 25 and 17 parameters respectively, on quarterly basis at the Environmental Laboratory at CMPDI (HQ), Ranchi.

#### 3.3 Results & Interpretations

The results are given in tabular form along with the applicable standards. Results are compared with Schedule - VI, effluent prescribed by MoEF&CC. Results show that most of the parameters are within the permissible limits.

## WATER QUALITY DATA

### (EFFLUENT WATER FOUR PARAMETERS)

Name of the Company: **Bharat Coking Coal** Year : **2016-17.**

**Limited**

Name of the Project: **Cluster - XV**

Month: **Oct, 2016.**

Name of the Stations & Code :

**1. MW15- Mine Discharge of  
Kharkharee**

#### First Fortnight


Sl. No.	Parameters	MW15 (Mine Discharge )	As per MOEF General Standards for schedule VI
		05.10.2016	
1	Total Suspended Solids	36	100 (Max)
2	pH	8.54	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	42	250 (Max)

#### Second Fortnight

Sl. No.	Parameters	MW15 (Mine Discharge )	As per MOEF General Standards for schedule VI
		22.10.2016	
1	Total Suspended Solids	32	100 (Max)
2	pH	8.12	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	42	250 (Max)

All values are expressed in mg/lit unless specified.

  
 Analysted By

  
 Approved By  
 Technical Manager  
 Env. Lab. CCCL, HQT  
 (Authorized Signatory)

## WATER QUALITY DATA

### (EFFLUENT WATER FOUR PARAMETERS)

Name of the Company: **Bharat Coking Coal Limited** Year : **2016-17.**

Name of the Project: **Cluster - XV**

Month: **Nov, 2016.**

Name of the Stations & Code :

**1. MW15- Mine Discharge of Kharkharee**

#### First Fortnight


Sl. No.	Parameters	MW15 (Mine Discharge )	As per MOEF General Standards for schedule VI
		04.11.2016	
1	Total Suspended Solids	36	100 (Max)
2	pH	8.48	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	44	250 (Max)

#### Second Fortnight

Sl. No.	Parameters	MW15 (Mine Discharge )	As per MOEF General Standards for schedule VI
		29.11.2016	
1	Total Suspended Solids	28	100 (Max)
2	pH	8.1	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	36	250 (Max)

All values are expressed in mg/lit unless specified.

  
 Approved By

  
 Approved By  
 By Technical Manager  
 Date: 04/11/2016  
 (Authorized Signatory)

## WATER QUALITY DATA

### (EFFLUENT WATER FOUR PARAMETERS)

Name of the Company: **Bharat Coking Coal Limited** Year : **2016-17.**

Name of the Project: **Cluster - XV**

Month: **Dec, 2016.**

Name of the Stations & Code :

**1. MW15- Mine Discharge of Kharkharee**

#### First Fortnight

Sl. No.	Parameters	MW15 (Mine Discharge )	As per MOEF General Standards for schedule VI
		01.12.2016	
1	Total Suspended Solids	28	100 (Max)
2	pH	8.64	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	32	250 (Max)

#### Second Fortnight

Sl. No.	Parameters	MW15 (Mine Discharge )	As per MOEF General Standards for schedule VI
		19.12.2016	
1	Total Suspended Solids	16	100 (Max)
2	pH	8.83	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	28	250 (Max)

All values are expressed in mg/lit unless specified.

Analysed By  
JSA/SA/SSA

Checked By  
Lab Incharge  
Env. Lab, RI-2, CMPDI

Approved By  
Dy. Technical Manager  
Env. Lab, CMPDI (HQ),  
(Authorized Signatory)

## **WATER QUALITY**

### **(SURFACE WATER- ALL PARAMETERS)**

Name of the Company: **Bharat Coking** Year : **2016-17.**

**Coal Limited**

Name of the Project: **Cluster - XV**

Period: **Q. E. Sept, 2016.**

Area : **Kharkharee UGP**

Project:  
**Kharkharee UGP**

**Cluster XV**

Stations:

Date of Sampling:  
**17/12/2016**

1. Upstream in Khudia Nala SW-5  
2. Downstream in Khudia Nala SW-32

**06/12/2016**

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:2296 – 1982 (Inland surface water) Class C	BIS Standard & Method
		SW-5	SW-32	3	4			
1	Arsenic (as As), mg/l, Max	<0.002	<0.002			0.002	0.2	IS 3025/37 1988 R 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2.4	2.4			2.00	300	IS 3025/44 1993, R 2003 3 day incubation at 27°C
3	Colour ( Hazen Unit)	colourless	colourless			Qualitative	300	Physical/Qualitative
4	Chlorides (as Cl), mg/l, Max	82	14			2.00	600	IS-3025/32 1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03			0.03	1.5	IS 3025/42 1992 R 2009, AAS-Flame
6	Dissolved Oxygen, min.	4.6	4.8			0.10	4	IS 3025/38 1989, R 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.76	0.40			0.02	1.5	APHA, 22 <sup>nd</sup> Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	0.016	0.008			0.01	0.05	APHA, 22 <sup>nd</sup> Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	0.746	1.827			0.06	50	IS 3025/53 2003, R 2009, AAS-Flame
10	Lead (as Pb), mg/l, Max	0.053	0.067			0.005	0.1	APHA, 22 <sup>nd</sup> Edition AAS-GTA
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	42.37	4.98			0.50	50	APHA, 22 <sup>nd</sup> Edition, UV-Spectrophotometric
12	pH value	7.95	8.18			2.5	6.5-8.5	IS-3025/11 1983, R-1996, Electrometric
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	<0.002	<0.002			0.002	0.0005	APHA, 22 <sup>nd</sup> Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002			0.002	0.05	APHA, 22 <sup>nd</sup> Edition AAS-GTA
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	107	18			2.00	400	APHA, 22 <sup>nd</sup> Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	794	140			25.00	1500	IS 3025/16 1984 R 2006, Gravimetric
17	Zinc (as Zn), mg/l, Max	0.091	<0.01			0.01	5.0	IS 3025/49 1994, R 2009, AAS-Flame

Analysed By  
JSA/SA/SSA

Checked By  
Lab Incharge  
Env. Lab, RI-2, CMPDI

Approved By  
By Technical Manager  
Env. Lab, CMPDI (HQ),  
(Authorized Signatory)

All values are expressed in mg/lit unless specified

Job No. 200316028

Cluster – XV, BCCL Environmental Monitoring Report

## WATER QUALITY (GROUND WATER- ALL PARAMETERS)

Name of the Company: **Bharat Coking** Year : **2016-17.**

**Coal Limited**

Name of the Project: **Cluster - XV**

Period: **Q. E. Dec, 2016.**

Area : **Kharkharee UGP**

Project:  
**Kharkharee UGP**

**Cluster XV**

Stations:

1. Ground Water from Kharkharee GW-15

Date of Sampling:  
**17/12/2016**

Sl. No	Parameter	Sampling Stations			Detection Limit	IS:10500 Drinking Water Standards	Standard / Test Method
		GW-15	2	3			
1	Boron (as B), mg/l. Max	<0.20			0.20	0.5	APHA, 22 <sup>nd</sup> Edition, Carmine
2	Colour, in Hazen Units	8			1	5	APHA, 22 <sup>nd</sup> Edition, Pt-Co Method.
3	Calcium (as Ca), mg/l. Max	171			1.60	75	IS-3025-40-1991, EDTA
4	Chloride (as Cl), mg/l. Max	196			2.00	250	IS-3025-32-1988, R-2007, Argentometric
5	Copper (as Cu), mg/l. Max	<0.03			0.03	0.05	IS-3025-42-1992, R-2009, AAS-Flame
6	Fluoride (as F) mg/l. Max	0.26			0.02	1.0	APHA, 22 <sup>nd</sup> Edition, SPADNS
7	Free Residual Chlorine, mg/l. Min	0.03			0.02	0.2	APHA, 22 <sup>nd</sup> Edition, DPD
8	Iron (as Fe), mg/l. Max	1.933			0.06	0.3	IS-3025-53-2003, R-2009, AAS-Flame
9	Lead (as Pb), mg/l. Max	0.168			0.005	0.01	APHA, 22 <sup>nd</sup> Edition, AAS-GIA
10	Manganese (as Mn), mg/l. Max	0.036			0.02	0.1	IS-3025-59-2006, AAS-Flame
11	Nitrate (as NO <sub>3</sub> ), mg/l. Max	43.53			0.5	45	APHA, 22 <sup>nd</sup> Edition, UV-Spectrophotometric
12	Odour	Agreeable			Qualitative	Agreeable	IS-3025-05-1983, R-2012, Qualitative
13	pH value	8.34			2.5	6.5 to 8.5	IS-3025-11-1983, R-1996, Electrometric
14	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l. Max	<0.002			0.001	0.001	APHA, 22 <sup>nd</sup> Edition, 4-Amino Antipyrine
15	Selenium (as Se), mg/l. Max	<0.002			0.002	0.01	APHA, 22 <sup>nd</sup> Edition, AAS-GIA
16	Sulphate (as SO <sub>4</sub> ), mg/l. Max	166			2.00	200	APHA, 22 <sup>nd</sup> Edition, Turbidity
17	Taste	Acceptable			Qualitative	Acceptable	APHA, 22 <sup>nd</sup> Edition, Taste
18	Total Alkalinity (as CaCO <sub>3</sub> ), mg/l. Max	244			4.00	200	IS-3025-23-1986, Titration
19	Total Arsenic (as As), mg/l. Max	<0.002			0.002	0.01	IS-3025-37-1988, R-2003, AAS-VGA
20	Total Chromium (as Cr), mg/l. Max	0.629			0.04	0.05	IS-3025-52-2003, AAS-Flame
21	Total Dissolved Solids, mg/l. Max	1042			25.00	500	IS-3025-16-1984, R-2006, Gravimetric
22	Total Hardness (as CaCO <sub>3</sub> ), mg/l. Max	700			4.00	200	IS-3025-21-1983, R-2002, EDTA
23	Turbidity, NTU, Max	1			1.0	1	IS-3025-10-1983 R-1996, Nephelometric
24	Zinc (as Zn), mg/l. Max	<0.01			0.01	5.0	IS-3025-49-1994, R-2009, AAS-Flame

Analysed By  
ASA/S-0584

Checked By  
S. Ananthraj  
Env. Lab. IN-2, CMPEI

Approved by  
By Technical Manager  
Date: 17/12/2016 (10/12/2016)  
(Signature of S. Ananthraj)

All values are expressed in mg/lit unless specified

## CHAPTER - IV

### NOISE LEVEL QUALITY MONITORING

#### 4.1 Location of sampling sites and their rationale

i) **Kharkharee CISF Office (N21)**

To assess the noise level in mine site, the noise levels were recorded in the mine area where all mining activities are in progress.

ii) **Madhuband UGP Office (N33)**

To assess the noise level in mine site, the noise levels were recorded in the mine area where all mining activities are in progress.

iii) **Block IV Kooridih OCP (N6)**

To assess the noise level in mine site, the noise levels were recorded in the mine area where all mining activities are in progress.

iv) **Lohapatti (N20)**

To assess the noise level in mine site, the noise levels were recorded in the mine area where all mining activities are in progress.

#### 4.2 Methodology of sampling and analysis

Noise level measurements in form of 'Leq' were taken using Integrated Data Logging Sound Level Meter (NI.-52 OF RION CO. Ltd. Make) during day time. Noise levels were measured for about one hour time in day time. Noise levels were measured in Decibels, 'A' weighted average, i.e. dB (A).

#### 4.3 Results & Interpretations

Ambient noise levels were recorded during day time and the observed values were compared with standards prescribed by MoEF&CC.

The results of Noise levels recorded during day time on fortnightly basis are presented in tabular form along with the applicable standard permissible limits. The observed values in terms of Leq are presented.

The observed values at all the monitoring locations are found to be within permissible limits.

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**NOISE LEVEL DATA**

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Name of the Company: **Bharat Coking** Year : **2016-17.**

**Coal Limited**

Name of the Project: **Cluster -XV**

Month: **Oct, 2016.**

Name of the Stations & Code :

**1. Block IV Kooridih OCP (N6)**

Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Block IV Kooridih OCP (N6)	Industrial area	27.11.2016	61.4	75

*\*Permissible limits of Noise Level as per MOEF Gazette Notification No. GSR 742(E) dt. 25.09.2000 Standards for Coal Mines and Noise Pollution (Regulation and Control )Rules,2000.*

*\* Day Time: 6.00 AM to 10.00 PM.*



**NOISE LEVEL DATA**Name of the Company: **Bharat Coking** Year : **2016-17.****Coal Limited**Name of the Project: **Cluster -XV**Month: **Nov, 2016.**

Name of the Stations &amp; Code :

**1. Madhuband UGP Office (N33)**

Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Madhuband UGP Office (N33)	Industrial area	30.11.2016	62.8	75

*\*Permissible limits of Noise Level as per MOEF Gazette Notification No. GSR 742(E) dt. 25.09.2000 Standards for Coal Mines and Noise Pollution (Regulation and Control) Rules, 2000.*

*\* Day Time: 6.00 AM to 10.00 PM.*

## NOISE LEVEL DATA

Name of the Company: **Bharat  
Coking Coal Limited**

Year : **2015-16.**

Name of the Project: **Cluster -XV**

Month: **Dec, 2016.**

Name of the Stations & Code :

1. **Kharkharee CISF Office(N21)**
2. **Lohapatti (N20)<sup>1</sup>**

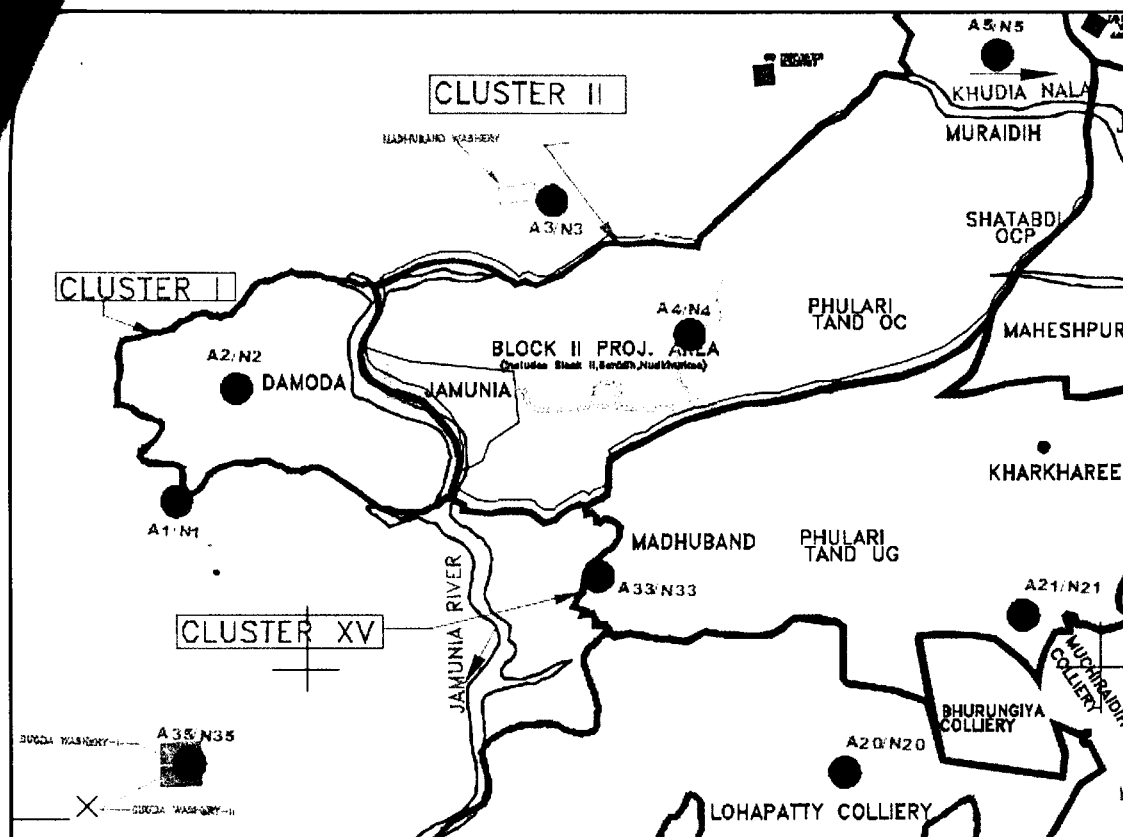
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Kharkharee CISF Office (N21)	Industrial area	02.12.2016	61.1	75
2	Lohapatti (N20)	Industrial area	13.12.2016	60.2	75
3	Kharkharee CISF Office (N21)	Industrial area	19.12.2016	60.7	75
4	Lohapatti (N20)	Industrial area	29.12.2016	61.1	75

*\*Permissible limits of Noise Level as per MOEF Gazette Notification No. GSR 742(E) dt. 25.09.2000 Standards for Coal Mines and Noise Pollution (Regulation and Control )Rules,2000.*

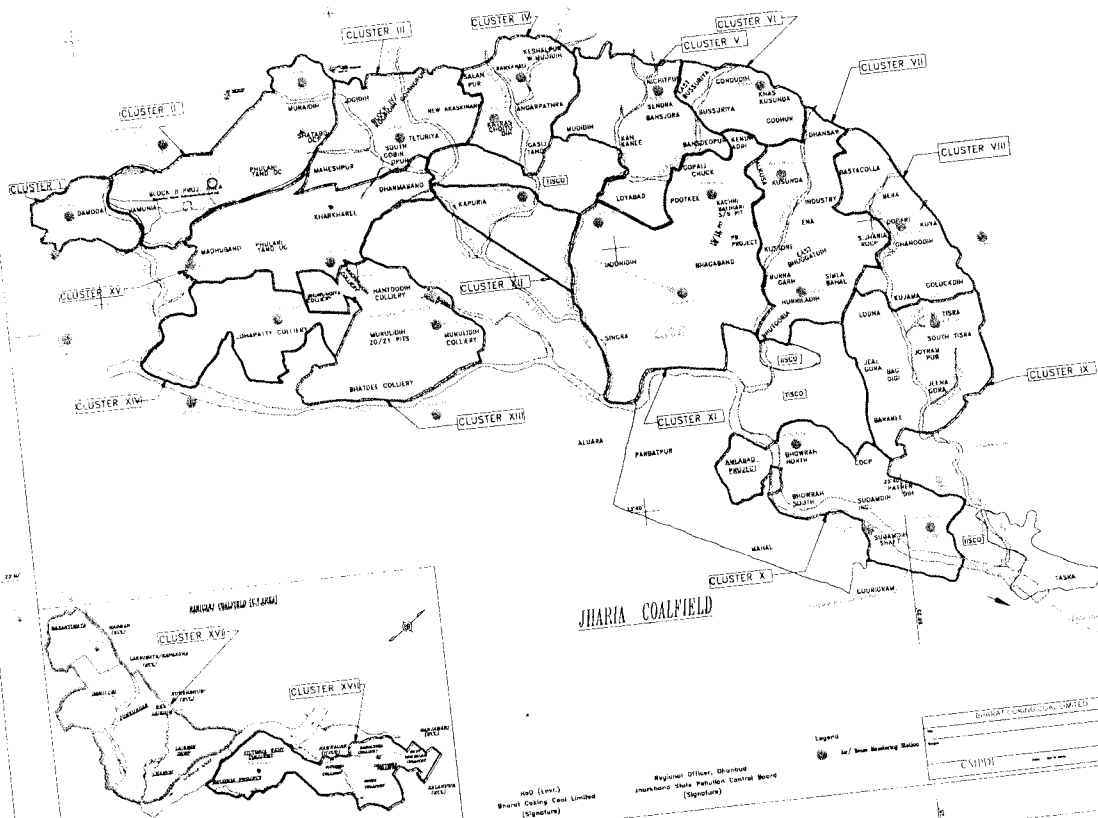
\* Day Time: 6.00 AM to 10.00 PM.

<sup>1</sup> Report released by Shri Indranil De, Manager (Env), CMPDI, RI-I, Asansol. Signed.....Dated 22.12.2016. Job No. 110310

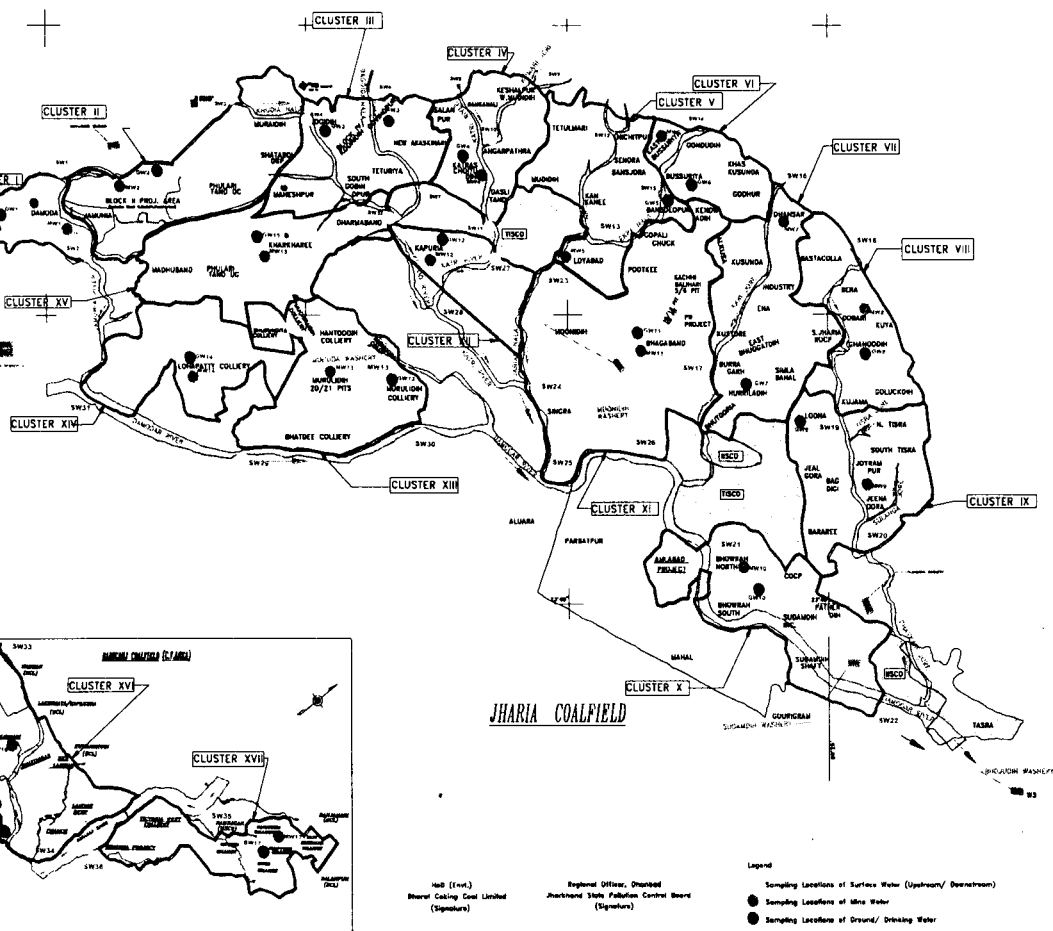
# Noise Level Monitoring Location of Cluster XV



Location of Air & Noise Monitoring Stations in BCCL



## Water Sampling Locations in BCCL

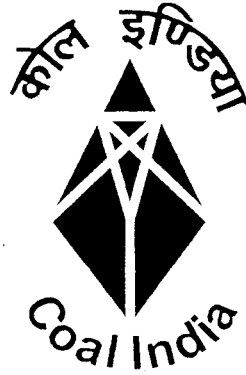


INDEX							
Section	Student Name	Grade	Teacher	Subject	Grade	Teacher	Subject
I	JOHN J. SMITH	1901	JOHN J. SMITH	Mathematics	1901	JOHN J. SMITH	Mathematics
II	JOHN J. SMITH	1902	JOHN J. SMITH	Mathematics	1902	JOHN J. SMITH	Mathematics
III	JOHN J. SMITH	1903	JOHN J. SMITH	Mathematics	1903	JOHN J. SMITH	Mathematics
IV	JOHN J. SMITH	1904	JOHN J. SMITH	Mathematics	1904	JOHN J. SMITH	Mathematics
V	JOHN J. SMITH	1905	JOHN J. SMITH	Mathematics	1905	JOHN J. SMITH	Mathematics
VI	JOHN J. SMITH	1906	JOHN J. SMITH	Mathematics	1906	JOHN J. SMITH	Mathematics
VII	JOHN J. SMITH	1907	JOHN J. SMITH	Mathematics	1907	JOHN J. SMITH	Mathematics
VIII	JOHN J. SMITH	1908	JOHN J. SMITH	Mathematics	1908	JOHN J. SMITH	Mathematics
IX	JOHN J. SMITH	1909	JOHN J. SMITH	Mathematics	1909	JOHN J. SMITH	Mathematics
X	JOHN J. SMITH	1910	JOHN J. SMITH	Mathematics	1910	JOHN J. SMITH	Mathematics
XI	JOHN J. SMITH	1911	JOHN J. SMITH	Mathematics	1911	JOHN J. SMITH	Mathematics
XII	JOHN J. SMITH	1912	JOHN J. SMITH	Mathematics	1912	JOHN J. SMITH	Mathematics
XIII	JOHN J. SMITH	1913	JOHN J. SMITH	Mathematics	1913	JOHN J. SMITH	Mathematics
XIV	JOHN J. SMITH	1914	JOHN J. SMITH	Mathematics	1914	JOHN J. SMITH	Mathematics
XV	JOHN J. SMITH	1915	JOHN J. SMITH	Mathematics	1915	JOHN J. SMITH	Mathematics
XVI	JOHN J. SMITH	1916	JOHN J. SMITH	Mathematics	1916	JOHN J. SMITH	Mathematics
XVII	JOHN J. SMITH	1917	JOHN J. SMITH	Mathematics	1917	JOHN J. SMITH	Mathematics
XVIII	JOHN J. SMITH	1918	JOHN J. SMITH	Mathematics	1918	JOHN J. SMITH	Mathematics
XIX	JOHN J. SMITH	1919	JOHN J. SMITH	Mathematics	1919	JOHN J. SMITH	Mathematics
XX	JOHN J. SMITH	1920	JOHN J. SMITH	Mathematics	1920	JOHN J. SMITH	Mathematics

$$10^{\frac{1}{2}} \approx 3.162, \quad 10^{\frac{1}{3}} \approx 2.154, \quad 10^{\frac{1}{4}} \approx 1.778$$


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# CSR Booklet

Barora Area

**Bharat Coking Coal Limited**

As per EC condition ( Specific Condition : 27) The 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.

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### 1.0 INTRODUCTION

Coal India has adopted CSR as a strategic tool for sustainable growth. For Coal India in the present context, CSR means not only investment of funds for Social Activity but also Integration of Business processes with Social processes. Even much before the issue of CSR became global concern, Coal India was aware of its Corporate Social Responsibility and was fulfilling the aspiration of the society through well-defined "Community Development Policy" within the periphery of 8 Kms. of the Project sites. This has resulted into a harmonious relationship between Coal India and the peripheral communities. Coal India has identified land outsee, PAP and those staying within the radius of 25 Kms of the Project as primary beneficiaries. Poor and needy section of the society living in different parts of India is second beneficiaries. For carrying out CSR activities, 80% of the budgeted amount are to be spent within the radius of 25 Km of the Project Site/Mines/Area HQ/Company HQ and 20% of the budget to be spent within the States in which operating.

### 1.1 SCOPE

As per Schedule VII of New Companies Act 2013 the following should be the Scope of Activities under Corporate Social Activities:

- 1) Eradicating hunger, poverty and malnutrition, promoting healthcare including preventive health care and sanitation and making available safe drinking water.
- 2) Promoting education, including special education and employment enhancing vocation skills especially among children, women, elderly, and differently able and livelihood enhancement projects.
- 3) Promoting gender equality, empowering women, setting up homes and hostels for women and orphans, setting up old age homes, day care centers and such other facilities for senior citizens and measures for reducing inequalities faced by socially and economically backward groups.
- 4) Ensuring environmental sustainability, ecological balance, protection of Flora and Fauna, animal welfare, agro-forestry, conservation of natural resources and maintaining quality of soil, air and water.
- 5) Protection of national heritage, art and culture including restoration of buildings and sites of historical importance and works of art; setting up public libraries, promotion and development of traditional arts and handicrafts.
- 6) Measures for the benefit of armed forces veterans, war widows and their dependents
- 7) Training to promote rural sports, nationally recognized sports, Paralympics sports and Olympic Sports.
- 8) Contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government for socio-economic development and relief and welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women.
- 9) Contributions or funds provided to technology incubators located within academic institutions which are approved by the Central Government.
- 10) Rural development projects.

### 2.0 SOURCE OF FUND

The fund for the CSR should be allocated based on 2% of the average net profit of the Company for the three immediate preceding financial years or Rs. 2.00 per tonne of Coal Production of previous year whichever is higher.



## 4.0 ACTION PLAN FOR CORPORATE SOCIAL RESPONSIBILITY

When the EC was granted, it was estimated as per prevailing policy, 5% of the retained earnings of the previous year subject to minimum of Rs. 5 per tonne of coal production of the previous year will be provided for Corporate Social Responsibility (CSR). Since Normative Capacity of the Cluster-IV is 2.851 MTP, an amount to the tune of Rs. 1, 42, 55,000 will be used for the CSR works per year for Cluster-IV.

## 4.0 STATUS OF CSR ACTIVITIES

### 4.0.1 Medical Camps during FY 2015-16

#### Medical Camp during Financial Year 2015-16

SN	Month	No. of Medical Camp	Beneficiaries	Amount (in Rs.)
1	April 15	12	325	3669.25
2	May 15	12	289	3262.81
3	June 15	13	335	3782.15
4	July 15	14	452	5103.08
5	August 15	12	348	3928.92
6	September 15	9	265	2991.85
7	October 15	9	360	4064.40
8	November 15	9	305	3443.45
9	December 15	6	148	1670.92
10	January 16	12	291	3285.39
11	February 16	11	229	2585.41
12	March 16	2	50	564.50
	<b>Total</b>	<b>121</b>	<b>3397</b>	<b>38352.13</b>

## Medical Camps during FY 2014-15

<b>Medical Camp during Financial Year 2014-15</b>				
SN	Month	No. of Medical Camp	Beneficiaries	Amount (in Rs.)
1	April 14	24	538	6074.02
2	May 14	15	555	6265.95
3	June 14	17	423	4775.67
4	July 14	11	300	3387.00
5	August 14	13	422	4764.38
6	September 14	19	630	7112.70
7	October 14	14	415	4685.35
8	November 14	15	350	3951.50
9	December 14	15	413	4662.77
10	January 15	10	257	2921.52
11	February 15	17	517	5836.93
12	March 15	11	324	3657.96
	<b>Total</b>	<b>181</b>	<b>5144</b>	<b>58095.75</b>

## Health Awareness Programme

<b>Health Awareness Programme (2014-15):</b>			
SN	Date	Activities	Amount (in Rs.)
1	25.04.2014	Nasa Mukti Abhiyan	10000.00
2	06.06.2014	Blood Pressure Detection	5000.00
4	30.07.2014	Aids Awareness Programme	5000.00
5	20.11.2014	Eye Checkup camp	25000.00

## CSR Booklet

CSR Clinics during FY 2015-16

### CSR Clinics (2015-16)

SN	Month	Beneficiaries
1	April 15	115
2	May 15	101
3	June 15	152
4	July 15	132
5	August 15	120
6	September 15	109
7	October 15	86
8	November 15	87
9	December 15	80
10	January 16	80
11	February 16	158
12	March 16	81
	<b>Total</b>	<b>1301</b>

CSR Clinics during FY 2014-15

### CSR Clinics (2014-15)

SN	Month	Beneficiaries
1	April 14	121
2	May 14	112
3	June 14	137
4	July 14	153
5	August 14	101

6	September 14	531
7	October 14	83
8	November 14	85
9	December 14	73
10	January 15	67
11	February 15	102
12	March 15	95
	<b>Total</b>	<b>1660</b>

#### Work done under CSR

#### Highlights of CSR work undertaken during 2014-15 in Brora Area

S.N.	Details	Rs.	Remarks
1	Construction of PCC road at Gonduadih west under Mohanpur village (from Khalil Mahto home to Primary school).	398665.00	25.01.2015 to 24.03.2015 (60 days)
2	Construction of Janaja shed at Ramakunda west under Amtand village	315554.00	15.10.2014 to 14.12.2014 (60 days)
3	Construction of 1 no. chhathh ghat at Muraidih colony, Hirak road river side	301674.00	15.10.2014 to 14.12.2014 (60 days)
4	Construction of Janaja shed at Muraidih colony near river of Hirak road	46664.00	31.03.2014 to 29.04.2014 (30 days)

## REHABILITATION AND RESETTLEMENT PLAN

### REHABILITATION AND RESETTLEMENT POLICY OF COAL INDIA LTD 2012.

#### Preamble

The location and quality of coal reserves, and their distance from markets, are the main factors to a great extent the selection of mine sites. For reserves that are distant to the surface, underground mining has proven to be the most efficient mining method. Underground mines require relatively large areas of land. Population growth, particularly in the eastern region, has made it increasingly difficult for the subsidiary coal companies to acquire the land they need for expanding their operations under the present Resettlement and Rehabilitation policy, 2008 of Coal India.

The resettlement and rehabilitation policies followed by the subsidiary coal mines have evolved over time and undergone numerous changes in response to changing circumstances. As and when the Central or State Governments enact amendments to the Land Acquisition Act, issue new guidelines for resettlement and rehabilitation, and as requirement Coal India reviews and modifies its resettlement and rehabilitation policy, taking into account the changing conditions in coal producing areas.

In addition to compensation for land coal companies provide Resettlement and Rehabilitation (R&R) package for project affected persons to compensate for loss of livelihood. Apart from compensation for house site, house, trees, cow shed, goat shed etc., employment is also provided to land custeers. In addition to this, efforts are made to rehabilitate them by construction of houses, building roads, installing electricity, drinking water etc. wherever feasible. However, demand for better compensation and better R&R package has been raised by project affected persons. This has been highlighted in various Parliamentary Committees. Coal Companies have to face representations and agitations by these land custeers who oppose the closure of existing mines and come in the way of expansion of new projects.

In the past, subsidiaries found it relatively easy to acquire land, if they were able to offer employment. Partly because of this practice, subsidiaries have built up a larger unskilled labour force beyond their needs. This has contributed to the heavy losses and many mines are incurring and has also affected their efficiency and capacity. The subsidiaries may still need to hire people in selected locations and continue to give preference to those whose livelihood will be affected by coal mining operations. Increasingly subsidiaries will need to develop other ways and means to console the land owners and others adversely affected by their projects and give them the choice of the method of compensation best suits their needs. Greater emphasis will need to be given to community requirements like schools, hospitals etc. Only with the resettlement and rehabilitation will elicit the required cooperation of project affected people, and make it possible for Coal India to acquire the land it needs to meet the increasing demand of coal for the economic development of the Country.

The purpose of the Resettlement and Rehabilitation Policy 2012 is to revise and provide greater flexibility to the basic principles for the resettlement and rehabilitation of people affected by coal mining projects i.e. Project Affect People (PAPs). It attempts to consolidate the different resettlement and rehabilitation practices that are being followed by subsidiaries as per the different State land Acquisition Acts and various decisions of the Coal India Board and to modify the Policy of 2008 so as to give the Board of the subsidiary Companies greater flexibility to deal more effectively with resettlement and rehabilitation issues and determine the rehabilitation packages best suited to local needs in line with this policy. The provisions of the National Rehabilitation and Resettlement Policy, 2007 and the Land Acquisition, Rehabilitation & Resettlement Bill, 2011 have also been kept in mind while framing the policy.

While Coal India's basic philosophy for compensating land-losers and other project-affected people remains substantially unchanged, the revised policy emphasizes the need to cultivate and maintain good relationships with the people affected by Coal India's projects starting as early as possible. It also underscores that the subsidiaries have a responsibility towards the land oustees whose livelihood is often taken away. On the other hand, subsidiaries need to protect themselves more effectively against unjustified claims, redundant manpower and swelling Wage Bills. To this end, the statement proposes that subsidiaries prepare detailed resettlement and rehabilitation action plans (RAPs) that clearly identify, at an early stage, the entitlements of the people affected by coal projects and enables them to exercise a choice between various options. The concept of Annuity in lieu of compensation/employment is also being introduced to mitigate, if not eliminate the ever dependence of Project Affected Families (PAFs) on CIL for provision of employment.

(1) The revised Resettlement & Rehabilitation Policy, 2012 is based on the deliberations of the Inter Ministerial Committee set up vide O.M. 490191/2011-PR/W-I dated 01-07-2011 of Ministry of Coal, deliberations of the CMDs meet held on 05/03/2012 at New Delhi and has been approved by the CIL Board in its 279<sup>th</sup> meeting held on 12<sup>th</sup> and 13<sup>th</sup> March, 2012.

**(2) Objectives and general principles of Coal India's Resettlement and Rehabilitation Policy- 2012**

- A. To re-visit CIL's existing R&R policy 2008 and evolve a PAP friendly policy by incorporating such provisions of the National Policy and The Draft Land Acquisition, Rehabilitation and Resettlement Bill-2011 as considered suitable in light of the growing difficulties many subsidiaries face in land acquisition.
- B. To accord the highest priority for avoiding or minimizing disturbance of the local population while taking decisions to open new mines or expand existing ones too (exploring alternative sites and project designs) and to ensure that wherever people are likely to be adversely affected by a project the subsidiaries will prepare resettlement and rehabilitation action plans for the project.
- C. To ensure a humane, participatory, informed consultative and transparent process for land acquisition for coal mining and allied activities with the least disturbance to the owners of the land and other affected families.
- D. To provide just and fair compensation to the affected families whose land has been acquired or proposed to be acquired or are affected by such acquisition and make.

adequate provisions for loss of livelihood of such affected persons including their rehabilitation and resettlement:

- E. To ensure that the cumulative outcome of compulsory acquisition should be that the affected persons become partners in development leading to an improvement in their post acquisition social and economic status and matters connected therewith or incidental thereto
- F. Through the preparation of resettlement and rehabilitation action plans, subsidiaries will safeguard that project-affected people improve or at least regain their former standard of living and earning capacity after a reasonable transition period. The transition period is to be kept to a minimum. However, the involvement of subsidiaries in resettlement and rehabilitation activities may continue until all the actions specified in the rehabilitation plan have been completed
- G. Involuntary resettlement is conceived and executed as a development programme with project-affected people being provided sufficient resources and opportunities to share in a project's benefits. The efforts of subsidiaries are complementary to the Government's schemes in rural development and the concurrence, approvals and support from concerned Government authorities will be sought
- H. In parallel, subsidiaries will work closely with non-governmental organizations of proven repute which are legally constituted and recognized and also have the confidence of the project-affected people, in the preparation and implementation of rehabilitation plans
- I. Corporate Social Responsibility (CSR) : Activities shall be intensified in and around the villages where land is being acquired in accordance with the CSR Policy of Coal India.
- J. Actual implementation of R&R package must follow a detailed survey of the project-affected villages to formulate the list of persons/families affected by the project, nature of the affect, the likely loss of income, etc. For this purpose, if necessary, the services of a reputed NGO with an impressive record of integrity and performance may be engaged

### 3. SCOPE

This Policy may be called "Rehabilitation and Resettlement Policy of Coal India Limited-2012". It extends to the Coal India Limited and its subsidiary companies in India. It shall come into force from the date of its approval by the CIL Board and is applicable to all cases in which land is taken after the date of approval by the CIL Board. While implementing the policy it is to be ensured that the provisions of the concerned Acts applicable and Rules mentioned there under shall not be violated

### 4. Definitions

(a) "affected family" means:

- (i) a family whose primary place of residence or other property or source of livelihood is adversely affected by the acquisition of land (including direct negotiation) for a project or involuntary displacement for any other reason, or

- (ii) any tenure holder, tenant, lessee or owner of other property, who on account of acquisition of land (including plot in the *abadi* or other property) in the affected area or other wise, has been involuntarily displaced from such land or other property; or
  - (iii) any agricultural or non-agricultural labourer, landless person (not having homestead land, agricultural land, or either homestead or agricultural land), rural artisan, small trader or self-employed person, who has been residing or engaged in any trade, business, occupation or vocation continuously for a period of not less than three years preceding the date of declaration of the affected area, and who has been deprived of earning his livelihood or alienated wholly or substantially from the main source of his trade, business, occupation or vocation because of the acquisition of land in the affected area or being involuntarily displaced for any other reason
- (b) "**family**" includes a person, his/her spouse, son including minor sons, dependant daughters, minor brothers, unmarried sisters, father, mother residing with him or her and dependent on him/her for their livelihood, and includes "**nuclear family**" consisting of a person, his/her spouse and minor children. Provided that where there are no male dependants, the benefit due to a land loser may devolve on dependent daughter nominated by the land loser.
- (c) "**land owner**" includes any person—
- (i) whose name is recorded as the owner of the land or part thereof in the records of the concerned authority; or
  - (ii) who is entitled to be granted Patta rights on the land under any law of the State including assigned lands; or
  - (iii) who has been declared as such by an order of the court or District Collector
- (d) **Displaced person** - means and includes any person who is deprived of his homestead on account of acquisition. Provided that the person/family who does not ordinarily reside in the homestead land acquired for the project can be termed "Displaced" but he will be eligible for compensation only for homestead and not for livelihood
- (e) **Ordinarily resides** shall mean residing in the homestead / acquired land for a period more than 6 months every year for at least the preceding 5 years

#### 5. Socio-economic Survey and preparation of RAP.

A baseline socioeconomic survey will be carried out to identify the PAPs who are entitled to receive benefits in line with Coal India's Resettlement and Rehabilitation Policy. This survey will be conducted within two months of notification under the relevant land acquisition Acts by the subsidiaries with the help of reputed independent institutional agencies, who are well versed with the social matrix of the area.



The basic objective of the socio-economic study will be to generate baseline data on the social and economic status of the population who are likely to lose their means of livelihood or homestead due to the acquisition of the land for the project. The data base will be used to formulate a viable and practical Rehabilitation Action Plan (RAP) for the affected persons in line with their entitlements. Digital Satellite Maps would also be prepared of the project Area freezing the dwelling units and habitations existing at the time of negotiation for Land Acquisition wherever feasible. The RAP will also address the following:-

**(A) Implementation, Monitoring and Evaluation, Dispute Mechanism**

The rehabilitation action plan will address the following

- (i) The project design including an analysis of alternative designs aimed at avoiding or minimizing resettlement
  - (ii) Socio-economic survey and activities to ensure restoration of incomes of PAFs in line with Uttar India's Resettlement and Rehabilitation Policy
  - (iii) Description of the institutional and other mechanisms for provision of entitlements
  - (iv) Time table for the acquisition and preparation of the resettlement site/s
  - (v) The cost and budgets for the resettlement and rehabilitation of PAFs
  - (vi) Project-specific arrangements to deal with grievances of PAFs, and
  - (vii) Time tables, benchmarks and arrangements for monitoring the resettlement and rehabilitation effort
- The RAP will be formulated in consultation with PAFs and State government.

(B) Environment Impact Assessment (EIA) will be conducted as per policy, guidelines and regulation of the locality in which the land has been acquired

**3. Eligibility Criteria -**

**(A) Eligibility Criteria for Economic Rehabilitation Benefits**

This benefit shall accrue only to Entitled Project Affected Person. Entitled Project Affected Person shall be one from the following categories

- (i) Persons from whom land is acquired including tribals cultivating land under traditional rights
- (ii) Persons whose homestead is acquired
- (iii) Sharecroppers, land lessees, tenants & day labourers
- (iv) Tribal dependent on forest produce as certified by the District Forest Officer, Revenue Authorities

**(B) Eligibility Criteria for Resettlement Benefits**

- (i) A family/person who has been displaced for resettlement reasons
- (ii) A family/person shall be termed "displaced" and hence eligible for resettlement benefits if a family/person has been a permanent resident and ordinarily residing in the project area on the date of publication of notification U/S 3 of CBA(A&D) 1957 / U/S 11 of C.A. Act 1944 or prior to the date of the land vested with the State/ Central government as the case may be and
- (iii) on account of acquisition of his/her homestead land / structure is displaced from such place
- or
- (iv) He/she is a homesteadless or landless family/person who has been displaced or displaced

## 7. Census & Identification of displaced families:

1. Within two months of publication of notice U/S 4(1) of the Land Acquisition Act of U/S 7 of CBA (A.D) Act 1957 for acquisition of land for the project a census would be undertaken in the manner to be decided by the Collector / project authority for identification of displaced families and for preparing their socio-economic profile and list of eligible persons for the purpose of receiving Rehabilitation & Resettlement Benefits.

2. A photo identity card to each Entitled Project Affected Person shall be issued under the signature of the Collector / project authority concerned indicating the following particulars.

- (a) Name of the village/GP/PS
- (b) Name, Father's name and address of the head of the family
- (c) Category of entitlement
- (d) Whether S.C./S.T./O.B.C./General
- (e) Age, Sex, educational qualification of the members of the family

## 8. Types of Compensation and Rehabilitation Entitlement

**Option to the land losers regarding Rehabilitation & Resettlement Benefit -** The land losers shall have the option for Rehabilitation and Resettlement benefits in accordance with the awards for each affected family in terms of the entitlements passed by the Concerned Collector of the State or as per this Policy with the consent of the concerned Collector.

### 8.1 Eligibility and Compensation

The table below shows the compensation and rehabilitation benefits will be offered by the subsidiaries for each Project Affected Person or family affected by one of their projects. Evidence to the effect that a person is a legitimate PAP will need to be provided in the form of a written legal document or reference to a record such as a revenue office certificate, electoral roll, ration card or school record.

Category of Persons affected by the Project	Compensation and Rehabilitation entitlement option
	Provisions
(i) Persons including tribals cultivating land under traditional rights) from whom land is acquired	All land owners with titles will receive monetary compensation for the land acquired from them. The value of the land is determined on the basis of prevailing legal norms. <i>In respect of tribals cultivating land under traditional rights, authentication of land held under traditional rights by state authorities will be necessary.</i> In addition to above the following shall apply

Category of  
Persons  
affected by the  
Project

**Compensation and Rehabilitation entitlement option**

**Provisions**

**A). Land Compensation** - Land compensation shall be paid as per the provisions of the concerned Act or State Govt. notification. Where no notification of the State Govt. is available the concerned subsidiary Board may decide on the rate of compensation keeping in view the compensation provided by the neighboring states. Authentication and seal held under traditional rights by state authorities will be necessary.

In addition to above Solatium will be paid as per provisions of the concerned Act - as imposed by the Concerned State Govt.

**Escalation of land compensation** - Escalation will be paid as per provisions of the concerned Act - as imposed by the Concerned State Govt. or Escalation at the rate of 12% per annum for a maximum period of three years.

**(B): Employment provision:** Apart from payment of the land compensation, employment may be given in the following manner:

- 1) The maximum total number of employments that may be provided to the land losers would be limited to the total no. of acres of land acquired divided by two. However employments will be released in proportion to the land possessed.
- 2) For every two acres of land one employment can be considered.
- 3) Subsidiaries of CRIL may give an option to the Land losers having less than two acres of land to club together their land to the extent of two acres and nominate one of the land losers among the groups of their dependent for employment under package deal or employment under Descending order system by preparing the list of eligible land losers in the descending order of land lost subject to the number equivalent to the total number of permissible employments or any other method with the approval of the respective Board of the subsidiary.
- 4) The land loser must be a domiciled resident. Proof of domicile certificate to this effect shall be issued by the concerned S.A. Authority.
- 5) The modalities for offering employment shall be such as may be approved by the Board of the Subsidiary concerned, subject to the unique conditions of the subsidiary provided that:
  - a) The initial employment shall be given with pay on the pay scale of NOVA with training period of 6 months.
  - b) In the seniority list, the seniority of the appointees shall be maintained in appropriate manner in order to keep the seniority intact.
  - c) The land loser trainees shall be posted as per requirements including underground duties.

Category of Persons affected by the Project	Compensation and Rehabilitation entitlement option
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### Provisions

#### (C): Lumpsum Monetary Compensation -

1. All the land losers who are not eligible for employment as above shall be entitled to receive monetary compensation in lieu of employment at the rate of Rs.5 00 000/- (Five Lakhs) for each acre of land on pro-rata basis.

2. Land losers who are offered employment as per principle specified in point No ( 8 (iiB) ) above will have the option either to opt for employment or to forego employment and opt for monetary compensation at the rate of Rs 5 00 000/- (Five lakhs) for each acre of land on pro-rata basis with minimum of Rs 50 000 ( Fifty thousands) provided that the employment thus surrendered shall not be available for offer to any other person and will stand lapsed from the total sanctioned number of employments as specified in point No ( 8 (iiB) ).

3. The Land losers who have clubbed their land in Package Deal can claim employment for only one land loser of the clubbed two acres of land and remaining land losers of the package cannot claim either employment or lump sum monetary compensation in lieu of the land contributed by them.

4. Annuity - All land losers who are entitled to get lump sum monetary compensation may opt for payment of compensation amount in the form of annuity made payable to the land losers monthly, annually or at such intervals (not less than one year) as may be opted for by him. The annuity be paid for a maximum period extending to 10 years of age or the life of the project for which the land has been acquired, whichever is earlier.

#### Note:

A person receiving a job forgoes all claims to above compensation and a person receiving above compensation forgoes all claims to employment.

(ii) Person  
whose  
homestead is  
acquired

- I. Compensation for homestead shall be paid as per the standard valuation method of the L.A Act. of the concerned State Govt.
- II. One time lump sum payment of Rs.3 00,000/- (three lakhs) shall be paid in lieu of alternate House site, Assistance in designing, Shifting Allowance, compensation for construction of cattle shed, Monetary compensation for construction of work shed etc. This compensation shall be paid to displaced persons only after vacation and demolition of the homestead/ work shed etc.
- III. Subsistence allowance :Each affected displaced family will get subsistence allowance at the rate of 25 days (Minimum Agricultural Wage) per month for one year.

## CSR Booklet

Category of Persons affected by the Project	Compensation and Rehabilitation entitlement option
	<b>Provisions</b>
(iii) Sharecroppers, land lessees, tenants and day labourers	<p>The subsidiary will assist PAP to take-up non farm self employment through petty contracts or formation of cooperatives. If such co-operatives will not be entitled for awarding work as per Manual, to lack of experience, the said co-operative will be facilitated for doing small jobs to acquire experience after relaxation of the provisions of the Manual pertaining to experience with approval of the Subsidiary Board. Subsequent jobs may be awarded after getting report on the completion / quality of the awarded jobs from the concerned Department or contractors.</p> <p>Contractors will also be persuaded to give job to eligible PAPs on a preferential basis where feasible as per terms of contract.</p>
(iv) Landless tribals Tribal dependent on forest produce	<p>The subsidiary will assist PAP to establish non farm self employment through the provision of infrastructure, petty contracts or formation of cooperatives and encourage provisions of Jobs with contractors. Contractors will be persuaded to give jobs to eligible PAPs on preferential basis where feasible.</p> <ul style="list-style-type: none"> <li>- In addition, the subsidiaries will shift the tribal community as a unit and provide facilities to meet the specific needs of the tribal community that will allow them to maintain their unique culture &amp; identity.</li> <li>- Tribal affected family will be given one time financial assistance of 500 days of MAW for loss of customary rights &amp; usages of forest produce. Loss of customary rights shall be ascertained &amp; authenticated by the district authority.</li> <li>- Tribal affected families resettled out of the district shall be given 25% higher rehabilitation and resettlement benefit.</li> </ul>

**9. Resettlement & Rehabilitation Committee** - A Committee will be constituted at Project Level under the chairmanship of the Collector to be called the Rehabilitation and Resettlement Committee with the following objectives to monitor and review the progress of implementation of the Rehabilitation and Resettlement scheme and to carry out post-implementation social audits in consultation with the village panchayat in rural areas and Municipality in urban areas in the manner will be decided by the concerned State Govt.

- i. To approve the list of land losers and other PAPs
- ii. To approve the list of persons eligible to be offered employment as per R&R Policy.
- iii. To approve the detailed Rehabilitation Plan for the project in consultation with the displaced persons and Gram Sachins
- iv. To expedite issue of domicile certificates and other necessary documents required for State Authorities
- v. To monitor and review the progress of the Rehabilitation Scheme, grant of benefits and handing over of possession of land in a smooth manner.
- vi. To facilitate the land acquisition process in any other manner as may be required including resolution of disputes
- vii. To carry out post implementation social audit in consultation with the authorities

**10. Community facilities** - The subsidiary will provide at the resettlement site a school, road with street light, pucca drain, pond, dugwell and/or tubewell for drinking water supply, community center, place of worship, dispensary, grazing land for cattle and play ground. Similar infrastructural facility if necessary will be extended to the host locality. The community facilities and services would be available to all residents of the area including PAPs and the host population.

The approach for operation of community facilities would be flexible and all efforts will be made to involve the State and local self Government / Panchayat for operating the facilities. To achieve this, subsidiaries will pursue with these agencies to ensure the same. The planning of the community facilities and their construction should be undertaken in consultation with the affected community.

**11. Corporate Social Responsibilities** - This should be as per Company's Corporate Social Responsibility (CSR) Policy.

#### **12. Monitoring and Evaluation Mechanism.**

The RAP will be monitored and evaluated periodically after the completion of the land acquisition process.

- i. The resettlement and rehabilitation activities are the responsibility of a separate group, both at the projects and corporate level, which will be constituted for planning, implementation, monitoring and evaluation of the Rehabilitation Action Plan. At the corporate level the group will be headed by a senior manager, whereas at the project, an executive of the rank of manager will head the group. The project group should have at least one member with social science qualification / experience and skills.

- ii. The project group will closely interact with the state authorities during the implementation of the RAP. Although the subsidiaries will develop the plots and infrastructural facilities in the resettlement colony and actively implement the RAP, assistance of State authorities will be taken for administrative services such as allotment of land. Implementation will be planned, monitored and corrective measures will be incorporated in the RAP, if needed. In addition to the State Government, the PAPs, the village leaders including the Pradhans and NGOs will be consulted and associated with the implementation of the RAP.
- iii. The Resettlement and Rehabilitation Cell at the corporate level will evaluate the implementation of the RAP after its completion.

**13. Flexibility to the Subsidiary Companies** – The Subsidiary Companies Boards have been authorised to approve necessary modifications in the R&R Policy with reference to unique conditions prevailing at the concerned Subsidiaries as the policy is not exhaustive.

(The above list is only indicative and not exhaustive)