



BHARAT COKING COAL LIMITED  
(A Subsidiary of Coal India Limited)  
OFFICE OF THE GENERAL MANAGER  
BLOCK-II AREA, PO-NAWAGARAH, DHANBAD-828306  
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Ref: GM/B-II/17-18/

Date: 15.05.2017

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

Sub: Six monthly EC compliance reports for the period from October 2016 to March 2017 in respect of Cluster -II group of mines of BCCL.

Ref: EC order no. J/11015/35/2011- IA.II(M) dt. 06/02/2013

Dear Sir,

Kindly find enclosed herewith the Six monthly EC compliance report for the period October 2016 to March 2017 in respect of Cluster -II group of mines of BCC  
Hope you will find the same in order.

Yours faithfully,

General Manager  
Block-II Area

Encl: as above

C.C to

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



**ENVIRONMENTAL CLEARANCE COMPLIANCE OF CLUSTER-II MINING AREA OF BCCL**  
**(GRANTED VIDE: J-11015/35/2011-IA II (M) dated 06.02.13**  
**(01.10.2016 to 31.03.12017)**

Sl. no.	A. Specific Conditions by MOEF:	Compliance
i	The maximum production by opencast mining shall not exceed beyond that for which environmental clearance has been granted for the 5 mine of Cluster- II	The production from the Cluster is within limit for which environment clearance has been granted.
ii	The measure to identify in the Environmental Plan for Cluster- II groups of mine and the conditions given in this environmental clearance letter shall be dovetailed to the implementation of the Jharia Action Plan.	Master Plan is dovetailed with environmental clearance condition.
iii	The proponent shall prepare time -series maps of the Jharia Coalfields through NRSA to monitor and prevent fire problems in the Jharia Coalfields by Isothermal mapping /imaging and monitoring temperatures of the coal seams (whether they are close to spontaneous ignition temperatures) and based on which, areas with potential fire problems shall be identified. Measures to prevent ingress of air (Ventilation) in such areas, to prevent restart fresh/spread fires in other areas including in mines of cluster II shall be undertaken. Expertise available internationally could also be utilized for control of fire in Jharia Coalfields and for their reclamation and to further minimize time for fire and subsidence control. Monitoring of fire should be carried out regularly.	Work Order for delineation of surface coal fire and associated land subsidence in Jharia Coalfield using satellite based remote sensing technique has awarded to NRSC and requested to start the work as early as possible.  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. In Block-ii OCP, CIMFR has been awarded to prepare scheme for dealing of fire near Adra-Gomoh railway line.
iv	Underground mining should be taken up after completion of reclamation of Opencast mine area.	It shall be complied. Presently only Open Cast working is being practiced.
v	The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilized with plantation so as to withstand the peak water flow and prevent mine inundation.	It is being followed. Action for construction of Embankments have been taken as specified in EMP.
vi	The rejects of washeries in Cluster –II should be send to FBC based plant.	No washery at present in cluster.
vii	No mining shall be undertaken where underground fires continue. Measure shall be taken to prevent/ check such fire including in old OB dump areas where the fire could start due to presence of coal /shale with sufficient carbon content.	It is being complied. Mining is being carried out as per the guidelines of DGMS. In area only Open Cast working is being practiced, However sufficient precaution is being taken to guard against fire.
viii	There shall be no external OB dumps. OB produce from the whole cluster will be 484.89Mm <sup>3</sup> . OB from 3 OCP and 2 patches in mixed mine shall be backfilled. At the end of the mining there shall be no void and the entire mined out area shall be re-vegetated. Areas	Action is being taken as specified in EMP. At the end of the mining, there shall not be voids and area will be re-vegetated and reclaimed with the proper eco-restoration techniques suggested by the experts available in BCCL and in external agencies i.e. FRI



	where opencast mining was carried out and completed shall be reclaimed immediately thereafter.	Dehradun, CEMDE Delhi.
ix	A detailed calendar plan of production with plan for OB dumping and backfilling (for OC mines) and reclamation and final mine closure plan for each mine of cluster-II shall be drawn up and implemented.	Calendar plan has been prepared. Mine closure plan as per the guidelines of Ministry of Coal have been prepared by Central Mine Planning and Design Institute (CMPDI) and it is being implemented
x	Mining shall be carried out as per statute from the streams/nalas flowing within the lease and maintaining a safe distance from the Nalas flowing along the lease boundary. A safety barrier of a minimum 60m width shall be maintained along the nalas/water bodies. The small water bodies in OC shall be protected to the extent feasible and the embankment proposed along water body shall be strengthened with stone pitching taking into account the highest flood level, based on past data, so as to guard against mine inundation. The slope of the embankment shall at least 2:1 towards the ML. The height of the embankment shall be at least 3 m higher than the HFL. The embankment to be constructed by OB /solid waste shall be strengthened with stone pitching. Slope stability of the embankment shall be done by planting suitable grass and shrubs using native species selected from the study area.	It is being followed.
xi	Active OB dumps near water bodies and rivers should be re-handled for backfilling abandoned mine voids. However, those which have been biologically reclaimed need not be disturbed.	No OB is being dumped near water bodies. The OB dumps created earlier already stabilized & further action has been taken for their eco-restoration work as per Road Map prepared by FRI, Dehradun.
xii	Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation. A total area of 1237.48ha shall be reclaimed and afforested.	It is being complied. Total area of 80.1 ha has been planted. A total area of 58.45 ha is being eco- restored.
xiii	The road should be provided with avenue plantation on both side as trees act as sink of carbon and other pollutant.	Most of the coal is being transported through railway siding .Road transport is being carried out through existing network of NH/SH where avenue plantation already exist, although proposal for avenue plantation along the sides of approach road to mine is initiated.
xiv	Specific mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted are and relevant for Cluster- II shall be implemented.	Dhanbad Action Plan is being implemented. The salient actions of this area: 1. Covered transportation of Coal. 2. Water sprinkling. 3. Plantation. 4. Utilization of surplus mine water.
xv	The locations of monitoring stations in the Jharia Coalfields should be finalized in consultation with the Jharkhand State Pollution Control Board. The Committee stated that smoke/dust emission vary from source to source (fuel wood, coal, 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 conducting source apportionment study for BCCL was floated twice, however, none of the bidders qualified. Therefore, as per the MoU "Sustainable Coal Mining in Coal India Limited" entered between CIL and NEERI, NEERI Nagpur was approached for conducting Source Apportionment Study BCCL for compliance of EC



		conditions. The proposal regarding Conducting the Source Apportionment Study has been submitted by NEERI. Presently it has been submitted to CIL for further scrutiny and approval.
xvi	The Transportation Plan for conveyor-cum-rail for Cluster-II should be dovetailed with Jharia Action Plan. Road transportation of coal during Phase-I should be by mechanically covered trucks, which should be introduced at the earliest.	Action has been taken for the transportation plan for conveyor cum rail system of dispatch. CMPDIL, RI-II has been requested to conduct study and prepare the plan in this regarding. Conversion of existing truck in to mechanically covered trucks in a phased manner has been taken up. By that time transportation is being done by covering vehicle with tarpaulin cover.
xvii	R&R of 1137 nos of PAF's involved. They should be rehabilitated at cost of Rs 45.08 Crores as per the approved Jharia Action Plan.	Implementation of master plan has already been started through Jharkhand Rehabilitation and Development Authority, Dhanbad and 547 families (Non-BCCL) has been rehabilitated at well-established Jharia Vihar Township located at Belgoria.
xviii	Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.	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 start shortly
xix	Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.	It shall be complied. As the area is having O/C mines, hence no subsidence is there.
xx	Sufficient coal pillars shall be left un extracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.	Presently only OCP working exist.
xxi	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	As the area is having O/C mines, hence no subsidence is there.
xxii	Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.	As the area is having O/C mines, hence no subsidence is there.
xxiii	Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.	As the area is having O/C mines, hence no subsidence is there.
xxiv	No depillaring operation shall be carried out below the township/colony.	Presently only OCP working exist in this cluster.
xxv	A detailed CSR Action Plan shall be prepared for Cluster II group of mines. Specific activities shall be identified for CSR for the budget of Rs 77.50 Lakhs per year @ Rs 5/T of coal provided for CSR for 2012-2013 and Rs. 5/T of coal as recurring expenditure. The 416.98 ha of area within Cluster II ML existing as waste land and not being acquired shall be put to	BCCL is implementing CSR activities, as per Govt. norms with a CSR Committee being evaluated by Tata Institute of Social Science.  All welfare/ CSR activities are also uploaded in Company web site.



	<p>productive use under CSR and developed with fruit bearing and other useful species for the local communities. In addition to afforesting 1237.48 ha of area at the post-mining stage, the 122.18ha of fallow/abandoned land and 416.98 ha waste land /barren land within Cluster- II mining lease area shall be rehabilitated/reclaimed as forest/agricultural land under CSR Plan in consultation with local communities. Third party evaluation shall be got carried out regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integrated with activities being taken up under CSR. The details of CSR undertaken along with budgetary provisions for the village-wise various activities and expenditure thereon shall be uploaded on the company website every year. The company must give priority to capacity building both within the company and to the local youth, who are motivated to carry out the work in future.</p>	
xxvi	<p>Details of transportation, CSR, R&amp;R and implementation of environmental action plan for the clusters-II should be brought out in a booklet form within a year and regularly updated</p>	<p>Booklet form is being maintained.</p>
xxvii	<p>Mine discharge water shall be treated to meet standards prescribed standards before discharge into natural water courses/agriculture. The quality of the water discharged shall be monitored at the outlet points and proper records maintained thereof and uploaded regularly on the company website.</p>	<p>Mine discharge water is being allowed to settle down in the mine sumps and is being used for domestic purpose after treatment through Pressure Filter. Regular monitoring of Water Quality Parameters is being carried out by CMPDIL.</p>
xxviii	<p>No groundwater shall be used for the mining activities. Additional water required, if any, shall be met from mine water or by recycling/reuse of the water from the existing activities and from rainwater harvesting measures. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry to dewatering of mine.</p>	<p>It is being complied and mine water is being used for the industrial purpose. Further mine water is also utilized for the community and irrigation purposes. Following action has been taken by the Company:</p> <ol style="list-style-type: none"> <li>1. Utilization of surplus mine water for irrigation, pisciculture purpose.</li> </ol>
xxix	<p>The void shall be converted into a water reservoir of a maximum depth of 15-20 m and shall be gently sloped and the upper benches of the reservoir shall be stabilised with plantation and the periphery of the reservoir fenced. The abandoned pits and voids should be backfilled with OB and reclaimed with plantation and or may be used for pisciculture.</p>	<p>. The void will be converted into the water body as specified in EMP at the end of the mining.</p>
xxx	<p>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 &amp; 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.</p>	<p>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 start shortly</p>
xxxi	<p>ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to conform to prescribed</p>	<p>Oil &amp; grease Trap for workshop is provided</p>



	standards in case discharge into the natural water course.	
xxxii	The location of monitoring stations in the Jharia coalfield should be finalized in consultation with Jharkhand State Pollution Control Board.	The location of monitoring stations in the Jharia Coalfield has been finalized with the Jharkhand State pollution Control Board.
xxxiii	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhubaneswar.	<p>Presently a time series map of vegetation cover in the Jharia Coal Field is being carried out through CMPDI, Ranchi using satellite imagery for every 3 years &amp; it has been uploaded on the official website of company.</p> <p>Further CMPDI 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.</p> <p>Also CIL issued a work order to CMPDI for monitoring of land reclamation status of all the OC coal mines having production capacity of more than 5MM<sup>3</sup> /Annum(coal+ OB) regularly on annual basis and for monitoring of less than 5 MM<sup>3</sup> /Annum at an interval of 3 years ,based on remote sensing satellite data for sustainable development of mining. This study reveals that during 2015-16, the two project of Cluster II viz. Block-II and Muraidih (having production capacity of more than 5MM<sup>3</sup> /Annum(coal+ OB)), total excavated area is only 8.20 Km<sup>2</sup> of which 1.55 Km<sup>2</sup> (18.90%) area has been planted, 5.53 Km<sup>2</sup> (67.44%) area is under backfilling and 1.12 Km<sup>2</sup> (13.66%) area is under active mining i.e. 86.34% area of the OC projects has come under reclamation.</p>
xxxiv	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.	CMPDI, has prepare the "Final Mine Closure Plan along with a Plan for Habitat Restoration and with details of Corpus Fund". BCCL is being depositing the amount as specified in the mine closure Plan.
xxxv	A separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.	<p>A full-fledged Environment Department, headed by a HoD (Environment) along with a suitable qualified multidisciplinary team of executives 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.</p> <p>Socio economic issues and capacity building are being evaluated by Tata Institute of Social Science.</p>
xxxvi	(A) Corporate Environment Responsibility:	



	<p>a)The Company shall have a well laid down Environment Policy approved by the Board of Directors.</p> <p>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.</p> <p>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.</p> <p>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.</p>	<p>A well defined Corporate Environment Policy has already been laid down and approved by the Board of Directors. This is also posted on BCCL website.</p> <p>Complied.</p> <p>A hierarchical system of the company to deal with environmental issues from corporate level to mine level already exists.</p> <p>Being complied.</p>
<b>B</b>	<b>General Conditions by MOEF:</b>	
i	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	Being complied.
ii	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 <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> 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 <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> 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.	The monitoring was done by CIMFR, Dhanbad, which is a CSIR laboratory recognized under the EP Rules. Now the monitoring work has been taken up by CMPDIL, Ranchi.
v	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	<p>Being Complied.</p> <p>Regular maintenance of vehicles and other machineries are being practiced for control of noise level.</p> <p>Ear plugs/muffs are provided to the persons engaged in blasting and drilling operations, operation of HEMM, etc .</p>
vi	Industrial waste water (workshop and waste water 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.	Excess mine water is being stored at old quarries and ponds for community use. This will help to recharge the ground water.



	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	It shall be complied. Regular maintenance of vehicle is being practiced to kept vehicular emission under control. Coal is being transported in tarpaulin covered trucks.
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.	It is being done by CMPDIL, Ranchi.
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.	Being Complied. Vocational training center under separate Human Resource Development Deptt. Is conducting regular training programme on these issues.
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 are carried out as per the Statutes and Director General of Mines Safety (DGMS) guideline. Medical examination of outsourcing Manpower is also being done.
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 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.
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> .	It has been complied. Advertisement in local newspaper has been given.
xiv	A copy of the environmental clearance letter shall be marked to concern Panchayat/ZilaParishad,Municipal corporation or Urban local body and local NGO,if any,from whom any suggestion /representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.	Being complied. Clearance letter has been displayed on our Company web site.



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 so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as 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.	Complied.
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.	Noted.
xix	The Environmental statement for each financial year ending 31 March in For -V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules,1986,as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by E-mail	Being complied.

  
**Nodal Officer(Env)**  
**Barora Area**

  
**Nodal Officer(Env)**  
**Block-II Area**

  
**General Manager**  
**Block-II Area**



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

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

**E. C. no. J-11015/35/2011-IA.II (M) dated 06.02.2013.**

**March, 2017**



**CMPDI**

ISO 9001 Company  
**Regional Institute-II**  
**Dhanbad, Jharkhand**



## CLUSTER - II

(FOR THE Q.E. December, 2016)

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**March, 2017**



**CMPDI**

ISO 9001 Company  
**Regional Institute-II**  
**Dhanbad, Jharkhand**



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## 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 MoEF&CC 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 MoEF&CC, 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, washery 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



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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 Mine effluent samples were collected and analysed for four parameters on fortnightly basis. The drinking 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 'L<sub>EQ</sub>' 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 MoEF&CC 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 MoEF&CC 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 MoEF&CC 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.



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## CHAPTER - I

### INTRODUCTION

- 1.0 Any industry and development activities including coal mining is bound to affect environmental attributes. There are positive as well as negative impacts of such operations. For controlling the adverse impacts a regular monitoring is essential. The environmental monitoring is being done as per the guide-lines stipulated by Ministry of Environment, Forest and Climate Change (MoEF&CC), Govt. of India.

The very purpose of environmental monitoring is to assess the quality of various attributes which affects the environment. As per 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 (CIL) is operating UG Mines and Opencast Mines in Jharia Coalfield (JCF). The Jharia Coalfield (JCF) having an area of 450 Sq.KM.

Bharat Coking Coal has awarded Environmental Monitoring work of all Projects, Cluster wise, to Central Mine Planning & Design Institute Limited (CMPDIL). The environmental monitoring has been carried out as per conditions laid down by MoEF&CC while granting environmental clearance to different projects. CMPDI has trained manpower and well equipped laboratory to carry out monitoring, analysis and R&D work in the field of environment.

- 1.1 The Cluster II is in the westernmost part of the Jharia coalfield. It includes Block II Colliery, Jamunia OCP, Shatabdi UG & OC & Phularitand. The cluster – II is situated about 40 - 45 kms from Dhanbad Railway Station. The mines of this cluster - II are operating since pre nationalization period (prior to 1972-73). It is connected by both Railway and Road. The drainage of the area is governed by Khudia Nala.
- 1.2 The cluster II is designed to produce 15.55 Mtpa (normative) and 20.215 Mtpa peak capacity of coal. The average grade of coal W-II to W-IV.

The Project has Environmental Clearance from Ministry of Environment, Forest and Climate Change (MoEF&CC) for a rated capacity of 15.55 MTPA (normative) and 20.215 MTPA peak capacity of coal production vide letter no **E.C. no. J-11015/35/2011-IA.II (M) dated 06.02.2013.**

Ministry of Environment, Forest and Climate Change while granting environmental clearance has given one of the General conditions that “ Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub> monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.” And other conditions regarding water / effluent and noise level monitoring.



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In compliance of these conditions the Environmental Monitoring has been carried out & report prepared for submission to MoEF&CC & JSPCB and other statutory authorities.

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## 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) Block II OCP (A4): Industrial Area

The location of the sampling station is 23° 47.297' N 86° 12.290' E. The sampler was placed at an elevated platform of approx. height 1.5m above ground level near water treatment plant of Block II OCP. The station was selected to represent the impact of mining activities of Block II, poor roads condition, heavy public traffic, coke oven plants, burning of coal by the surrounding habitants.

###### ii) Muraidih OCP (A5): Industrial Area

The sampler was placed at a height of approx. 1.5m above ground level at Muraidih project office. The station was selected to represent the impact of mining activities of Muraidih OCP, poor roads condition, Mine activity generate coal dust for coal transport.

##### II. BUFFER ZONE Monitoring Location

###### i) Madhuband washery (A3) : industrial area

The location of the sampling station is at the Washery premises. The sampler was placed at a height of approx. 1.5m above ground level near the project office.

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

The location of the sampling station is 23°45'24.48" N & 86°11'59.44"E. The sampler was placed at a height of approx. 1.5m above ground level at project 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 & fine particulates 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 83 to 118  $\mu\text{m}^3$ .

In **buffer zone** in **Industrial area** varies from 82 to 104  $\mu\text{m}^3$

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

In **core zone** under **Industrial area** varies from 37 to 56  $\mu\text{m}^3$ .

In **buffer zone** in **Industrial area** varies from 34 to 53  $\mu\text{m}^3$

#### **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 12 to 14  $\mu\text{m}^3$

#### **Oxides of Nitrogen:**

In **core zone** under **Industrial area** varies from 21 to 26  $\mu\text{m}^3$ .

In **buffer zone** in **Industrial area** 28  $\mu\text{m}^3$ .

## AMBIENT AIR QUALITY DATA

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

Year : **2016-17.**

Name of the Cluster : **Cluster – II**

Q.E.: **Dec' 2016**

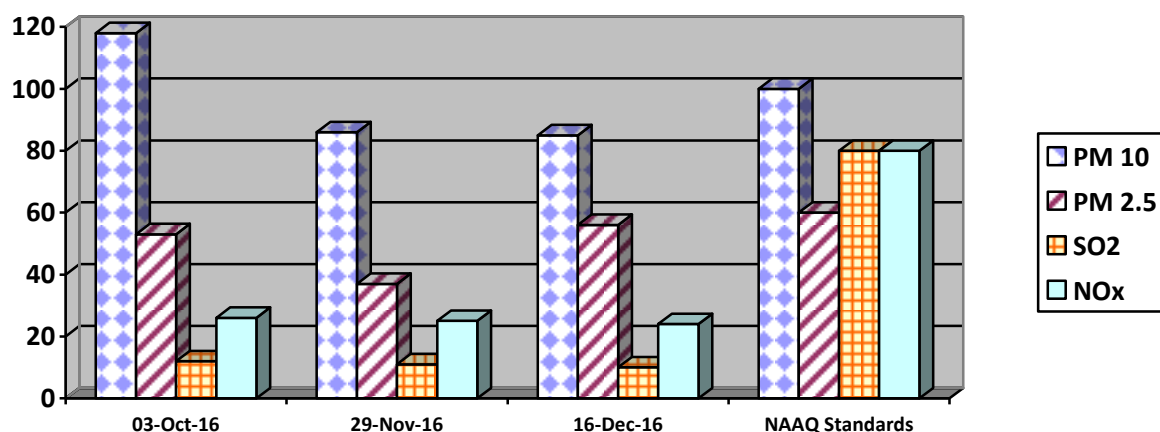
**Station Code/Name:** (a) **A4 Block II OCP**  
(b) **A5 Muraidih OCP**

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

**ZONE: CORE**


**(a). Station Code/Name: A4 Block II OCP Category: Industrial.**

Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	03 - Oct -16	118	53	12	26
2	29 - Nov -16	86	37	11	25
3	16 - Dec -16	85	56	<10	24
NAAQ Standards		100	60	80	80



Note:

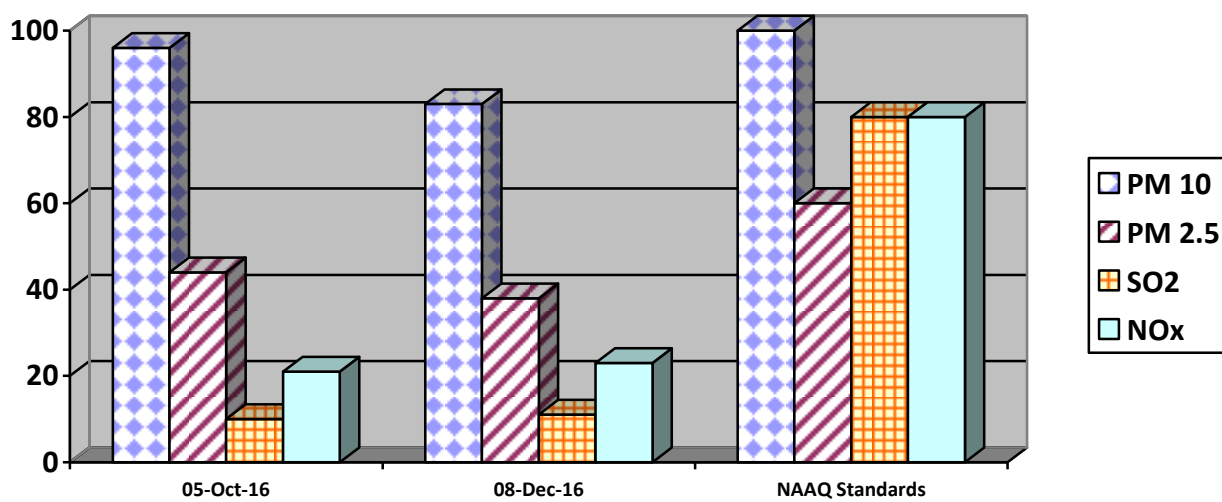
- All values are expressed in microgram per cubic meter.
- 24 hours duration

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




(b). Station Code/Name: A5 – Muraidih OCP, Category: Industrial<sup>2</sup>.

Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	05 - Oct -16	96	44	<10	21
2	08 - Dec-16	83	38	11	23
	NAAQ Standards	100	60	80	80



Note:

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

<sup>2</sup> Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed..........Dated 22.02.2017. Job No. 110310

## AMBIENT AIR QUALITY DATA

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

Year : **2016-17.**

Name of the Cluster : **Cluster – II**

Q.E.: **Dec 2016**

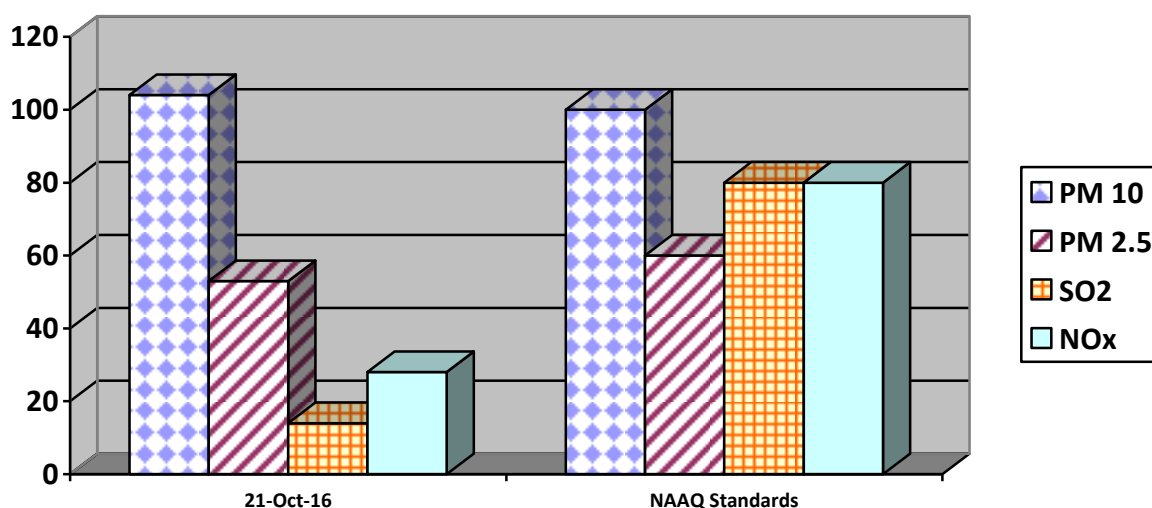
**Station Code/Name: (a) A3 Madhuband Washery  
(b) A33 Madhuband UGP**

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

**ZONE: BUFFER**


**(a). Station Code/Name: A3 – Madhuband Washery, Category: Industrial.**

Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	21 - Oct -16	104	53	14	28
	NAAQ Standards	100	60	80	80



Note:

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

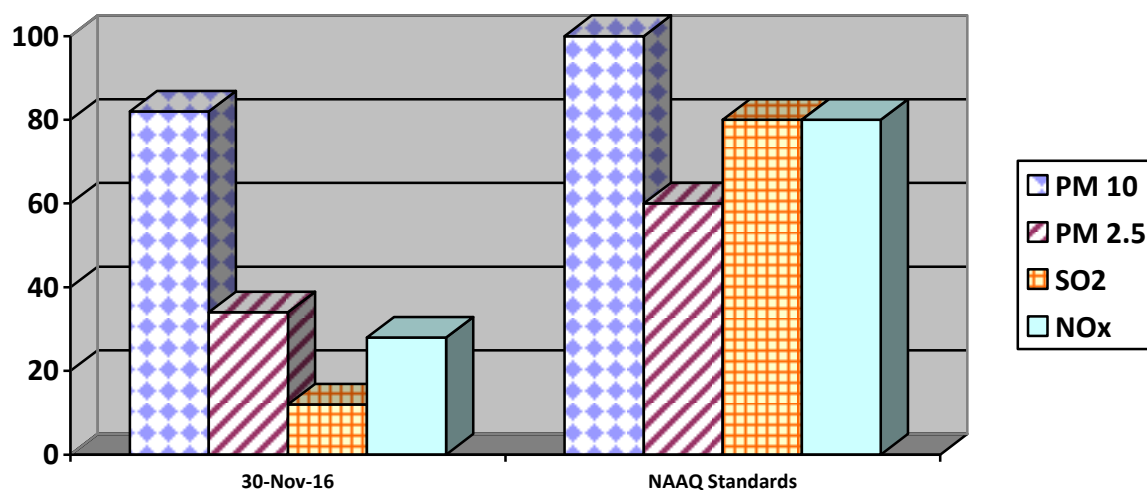
<sup>3</sup> Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed..........Dated 22.02.2017. Job No. 110310



(b). Station Code/Name: A33 – Madhuband UGP


Category: Industrial<sup>4</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

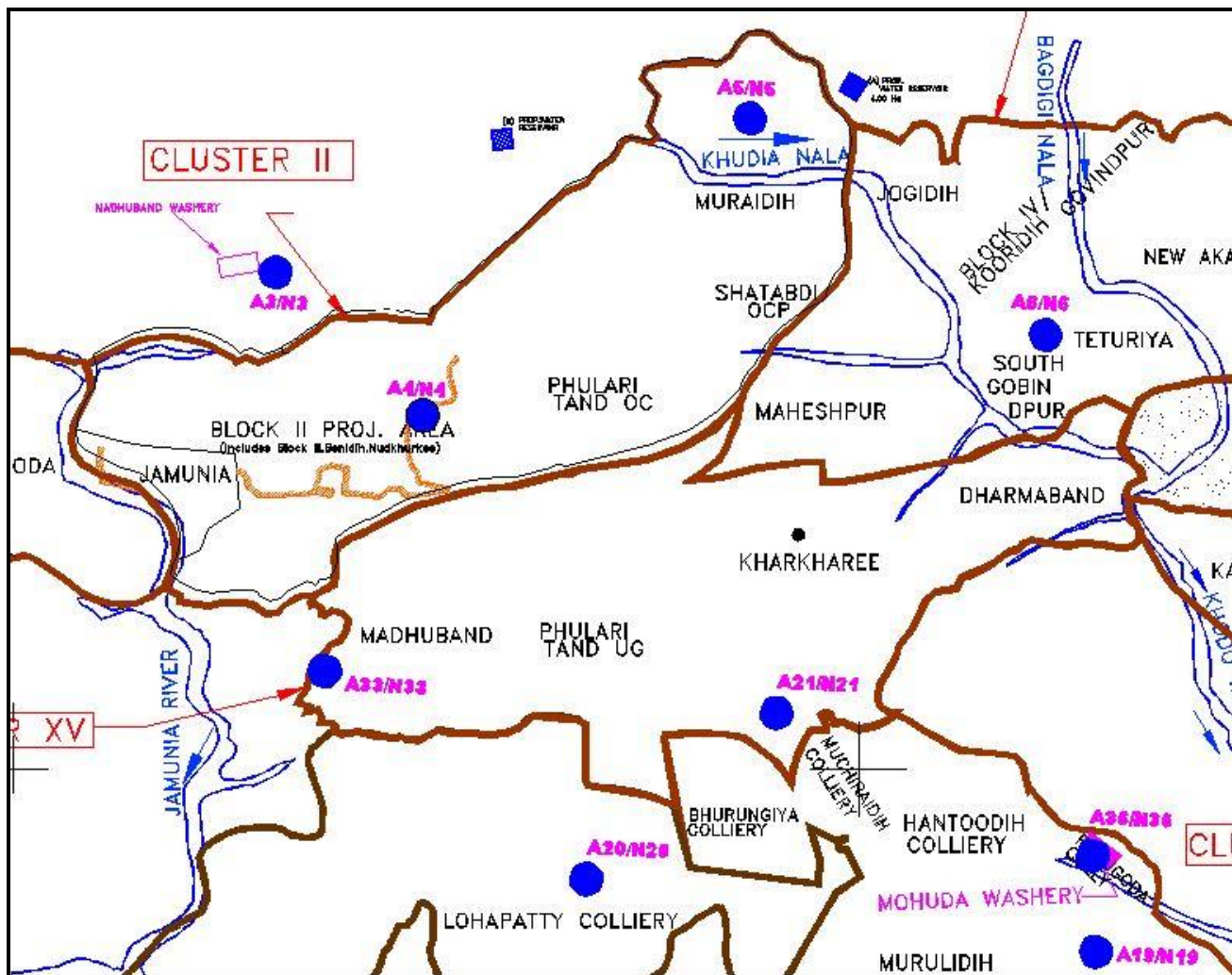


Note:

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

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

## Ambient Air Monitoring Stations in Cluster- II 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.

## NATIONAL AMBIENT AIR QUALITY STANDARDS

New Delhi the 18<sup>th</sup> November 2009

In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No. 14 of 1981), and in supersession of the notification No(s).S.O.384(E), dated 11<sup>th</sup> April 1994 and S.O.935(E), dated 14<sup>th</sup> October 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect

Pollutant	Time Weighted Average	Concentration in Ambient Air		Methods of Measurement
		Industrial, Residential, Rural and other Areas	Ecologically Sensitive Area (Notified by Central Government)	
<b>Sulphur Dioxide (SO<sub>2</sub>), µg/m<sup>3</sup></b>	Annual * 24 Hours **	50 80	20 80	-Improved West and Gaeke Method -Ultraviolet Fluorescence
<b>Nitrogen dioxide (NO<sub>2</sub>), µg/m<sup>3</sup></b>	Annual * 24 Hours **	40 80	30 80	-Jacob & Hochheiser modified (NaOH-NaAsO <sub>2</sub> ) Method -Gas Phase Chemiluminescence
<b>Particulate Matter (Size less than 10µm) or PM<sub>10</sub>, µg/m<sup>3</sup></b>	Annual * 24 Hours **	60 100	60 100	-Gravimetric -TEOM -Beta attenuation
<b>Particulate Matter (Size less than 2.5µm) or PM<sub>2.5</sub>, µg/m<sup>3</sup></b>	Annual * 24 Hours **	40 60	40 60	-Gravimetric -TEOM -Beta attenuation
<b>Ozone (O<sub>3</sub>), µg/m<sup>3</sup></b>	8 Hours * 1 Hour **	100 180	100 180	-UV Photometric -Chemiluminescence -Chemical Method
<b>Lead (Pb), µg/m<sup>3</sup></b>	Annual * 24 Hours **	0.50 1.0	0.50 1.0	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper -ED-XRF using Teflon filter
<b>Carbon Monoxide (CO), mg/m<sup>3</sup></b>	8 Hours ** 1 Hour **	02 04	02 04	-Non dispersive Infrared (NDIR) Spectroscopy
<b>Ammonia (NH<sub>3</sub>), µg/m<sup>3</sup></b>	Annual * 24 Hours **	100 400	100 400	-Chemiluminescence -Indophenol blue method
<b>Benzene (C<sub>6</sub>H<sub>6</sub>), µg/m<sup>3</sup></b>	Annual *	05	05	-Gas Chromatography (GC) based continuous analyzer -Adsorption and desorption followed by GC analysis
<b>Benzo(a)Pyrene (BaP) Particulate phase only, ng/m<sup>3</sup></b>	Annual *	01	01	-Solvent extraction followed by HPLC/GC analysis
<b>Arsenic (As), ng/m<sup>3</sup></b>	Annual *	06	06	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper
<b>Nickel (Ni), ng/m<sup>3</sup></b>	Annual *	20	20	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper

\* Annual Arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.



\*\* 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

**NOTE:** Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigations.

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## CHAPTER – III

### WATER QUALITY MONITORING

#### 3.1 Location of sampling sites

(Refer **Plate No. - II**)

i) **Mine Discharge of Block II OCP (MW2)**

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 **Jogidih Village (GW2)**

iii) Surface water quality at **U/S of Khudia Nala (SW3)**

iv) Surface water quality at **D/S of Khudia Nala (SW4)**

#### 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 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 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 Cluster : **Cluster - II**

Month: **Oct, 2016.**

Name of the Stations & Code :

**1. MW2- Mine Discharge of  
Block II OCP**

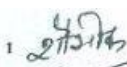
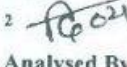
### First Fortnight

Sl. No.	Parameters	MW2 (Mine Discharge )	As per MOEF General Standards for schedule VI
		03.10.2016	
1	Total Suspended Solids	28	100 (Max)
2	pH	8.35	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	36	250 (Max)

### Second Fortnight

Sl. No.	Parameters	MW2 (Mine Discharge )	As per MOEF General Standards for schedule VI
		25.10.2016	
1	Total Suspended Solids	32	100 (Max)
2	pH	8.05	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.

1   
2   
Analysed By

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

## WATER QUALITY DATA (EFFLUENT WATER- FOUR PARAMETERS)

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

**Limited**

Name of the Cluster : **Cluster - II**

Month: **Nov, 2016.**

Name of the Stations & Code :

**1. MW2- Mine Discharge of  
Block II OCP**

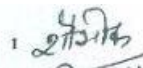
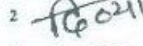
### First Fortnight

Sl. No.	Parameters	MW2 (Mine Discharge )	As per MOEF General Standards for schedule VI
		04.11.2016	
1	Total Suspended Solids	32	100 (Max)
2	pH	8.29	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	38	250 (Max)

### Second Fortnight

Sl. No.	Parameters	MW2 (Mine Discharge )	As per MOEF General Standards for schedule VI
		26.11.2016	
1	Total Suspended Solids	36	100 (Max)
2	pH	8.16	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	46	250 (Max)

All values are expressed in mg/lit unless specified.

1   
2   
Analysed By

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



## WATER QUALITY DATA

### (EFFLUENT WATER- FOUR PARAMETERS)

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

**Limited**

Name of the Cluster : **Cluster - II**

Month: **Dec, 2016.**

Name of the Stations & Code :

**1. MW2- Mine Discharge of Block II OCP**

#### First Fortnight

Sl. No.	Parameters	MW2 (Mine Discharge )	As per MOEF General Standards for schedule VI
		15.12.2016	
1	Total Suspended Solids	84	100 (Max)
2	pH	8.45	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	68	250 (Max)

#### Second Fortnight

Sl. No.	Parameters	MW2 (Mine Discharge )	As per MOEF General Standards for schedule VI
		30.12.2016	
1	Total Suspended Solids	16	100 (Max)
2	pH	8.44	5.5 - 9.0
3	Oil & Grease	<2.0	10 (Max)
4	COD	72	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 Cluster : **Cluster - II**

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

Area : Block-II OCP

Project: Block-II  
OCP

Cluster II

Stations:

1. Upstream in Khudia Nala SW-3
2. Downstream in Khudia Nala SW-4

Date of Sampling:

17/12/2016

17/12/2016

Sl. No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		SW-3	SW-4	3	4		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002			0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2.8	3.0			2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Colour ( Hazen Unit)	colourless	colourless			Qualitative	Physical/Qualitative
4	Chlorides (as Cl), mg/l, Max	32	42			2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03			0.03	IS 3025 /42 : 1992 R : 2009 , AAS-Flame
6	Dissolved Oxygen, min.	5.2	4.8			0.10	IS 3025/38:1989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.68	0.55			0.02	APHA, 22 <sup>nd</sup> Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	0.016	0.018			0.01	APHA, 22 <sup>nd</sup> Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	0.422	0.684			0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	0.053	0.053			0.005	APHA, 22 <sup>nd</sup> Edition AAS-GTA
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	5.84	4.27			0.50	APHA, 22 <sup>nd</sup> Edition, UV-Spectrophotometric
12	pH value	8.52	8.41			2.5	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	APHA, 22 <sup>nd</sup> Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002			0.002	APHA, 22 <sup>nd</sup> Edition AAS-GTA
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	35	40			2.00	APHA, 22 <sup>nd</sup> Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	320	340			25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Zinc (as Zn), mg/l, Max	<0.01	<0.01			0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

\*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** **(GROUND WATER- ALL PARAMETERS)**

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

**Coal Limited**

Name of the Cluster : **Cluster - II**

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

Area : Block-II OCP

Project: Block-II Cluster II  
OCP

Stations:

1. Ground Water from Joyrampur Village GW-2

Date of Sampling:  
17/12/2017

Sl. No	Parameter	Sampling Stations			Detection Limit	IS:10500 Drinking Water Standards	Standard / Test Method
		GW-2	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	21			1	5	APHA, 22 <sup>nd</sup> Edition ,Pt.-Co. Method
3	Calcium (as Ca), mg/l, Max	40			1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	24			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	0.75			0.02	1.0	APHA, 22 <sup>nd</sup> Edition , SPADNS
7	Free Residual Chlorine, mg/l, Min	0.02			0.02	0.2	APHA, 22 <sup>nd</sup> Edition, DPD
8	Iron (as Fe), mg/l, Max	0.975			0.06	0.3	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
9	Lead (as Pb), mg/l, Max	0.065			0.005	0.01	APHA, 22 <sup>nd</sup> Edition, AAS-GTA
10	Manganese (as Mn), mg/l, Max	<0.02			0.02	0.1	IS-3025/59:2006, AAS-Flame
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	5.8			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	8.28			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			0.002	0.001	APHA, 22 <sup>nd</sup> Edition, 4-Amino Autipyrine
15	Selenium (as Se), mg/l, Max	<0.002			0.002	0.01	APHA, 22 <sup>nd</sup> Edition, AAS-GTA
16	Sulphate (as SO <sub>4</sub> ) mg/l, Max	70			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 (c <sub>a</sub> CO <sub>3</sub> ), mg/l, Max	92			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	0.292			0.04	0.05	IS-3025/52:2003, AAS-Flame
21	Total Dissolved Solids, mg/l, Max	324			25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (c <sub>a</sub> CO <sub>3</sub> ), mg/l, Max	160			4.00	200	IS-3025/21:1983, R-2002, EDTA
23	Turbidity, NTU, Max	11			1.0	1	IS-3025/10:1984 R-1996, Nephelometric
24	Zinc (as Zn), mg/l, Max	<0.01			0.01	5.0	IS 3025/ 49 : 1994, R : 2009, AAS-Flame

\*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)



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## CHAPTER - IV

### NOISE LEVEL QUALITY MONITORING

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

i) **Block II OCP (N4)**

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) **Muraidih OCP (N5)**

To assess the noise generated in the Shatabdi mines activity. Noise levels were recorded in the mines area,

iii) **Madhuband Washery (N3)**

To assess the noise level in the industrial area, noise levels were recorded near washery where activities of project during day time in the project area.

iv) **Madhuband UGP (N33)**

To assess the noise level in the industrial area, noise levels were recorded during day time in the Mines area.

#### 4.2 Methodology of sampling and analysis

Noise level measurements in form of 'L<sub>EQ</sub>' were taken using Integrated Data Logging Sound Level Meter (NL-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 MoEFCC.

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 L<sub>EQ</sub> are presented.

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

## NOISE LEVEL DATA

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

Year : **2016-17.**

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

Month: **Oct, 2016.**


Name of the Stations & Code :

1. **Block II OCP (N4)**
2. **Madhuband Washery (N3)<sup>1</sup>**

Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	<i>*Permissible Limit of Noise level in dB(A)</i>
1	Block II OCP (N4)	Industrial area	03.10.2016	58.7	75
2	Madhuband Washery (N3)	Industrial area	21.10.2016	60.6	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, +Night Time: 10.00 PM to 6.00 AM.*

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

## NOISE LEVEL DATA

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

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

Month: **Nov, 2016**


Name of the Stations & Code :

1. **Block II OCP (N4)**
2. **Madhuband UGP (N33)<sup>2</sup>**

Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Block II OCP (N4)	Industrial area	29.11.2016	61.3	75
2	Madhuband Washery (N3)	Industrial area	30.11.2016	62.8	75
3	Block II OCP (N4)	Industrial area	29.11.2016	62.7	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, +Night Time: 10.00 PM to 6.00 AM.

<sup>2</sup> Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed.....  .....Dated 22.02.2017. Job No. 110310



## NOISE LEVEL DATA

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

Year : **2016-17.**

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

Month: **Dec, 2016**


Name of the Stations & Code :

1. **Block II OCP (N4)**
2. **Muraidih OCP (N5)<sup>3</sup>**

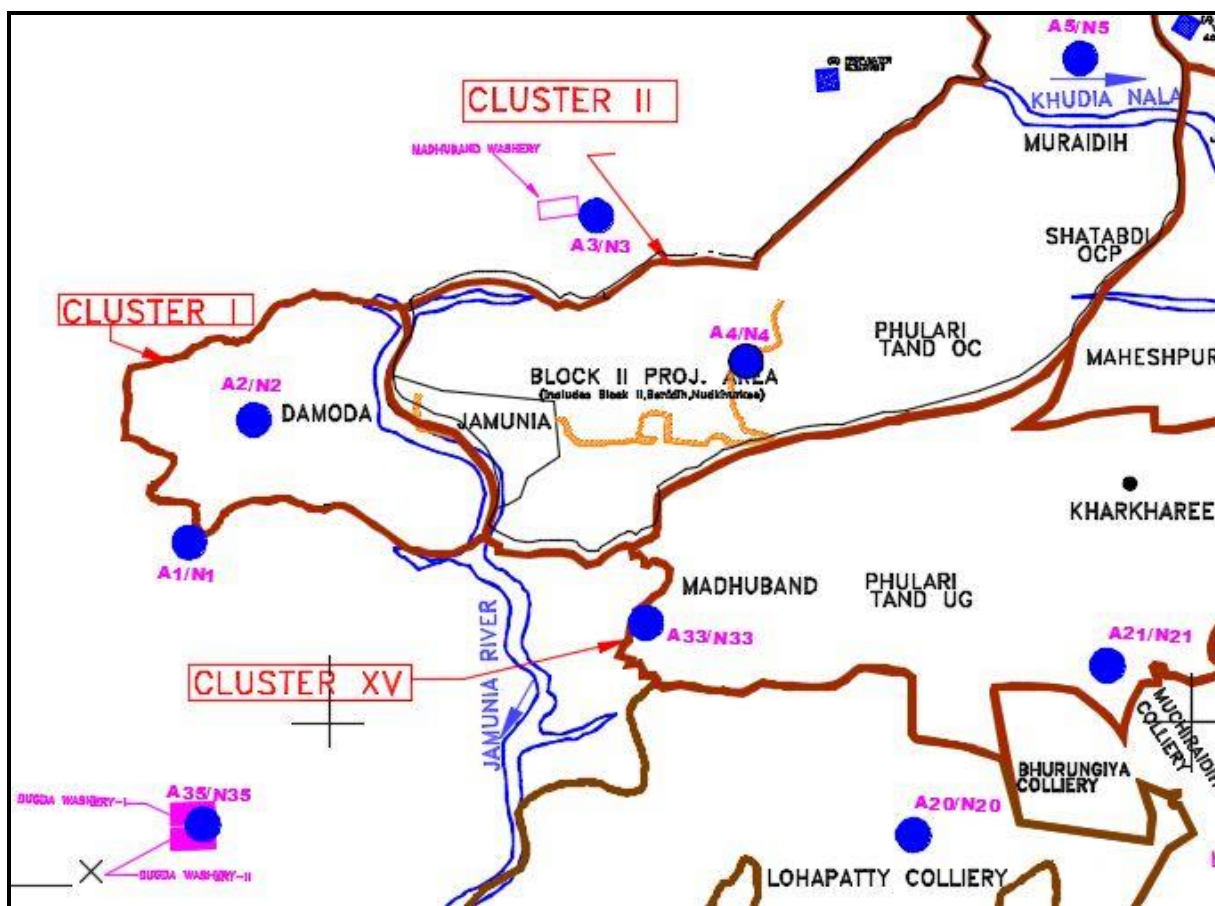
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	<i>*Permissible Limit of Noise level in dB(A)</i>
1	Block II OCP (N4)	Industrial area	16.12.2016	61.3	75
2	Muraiduh OCP (N5)	Industrial area	08.12.2016	59.7	75

*\*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.*

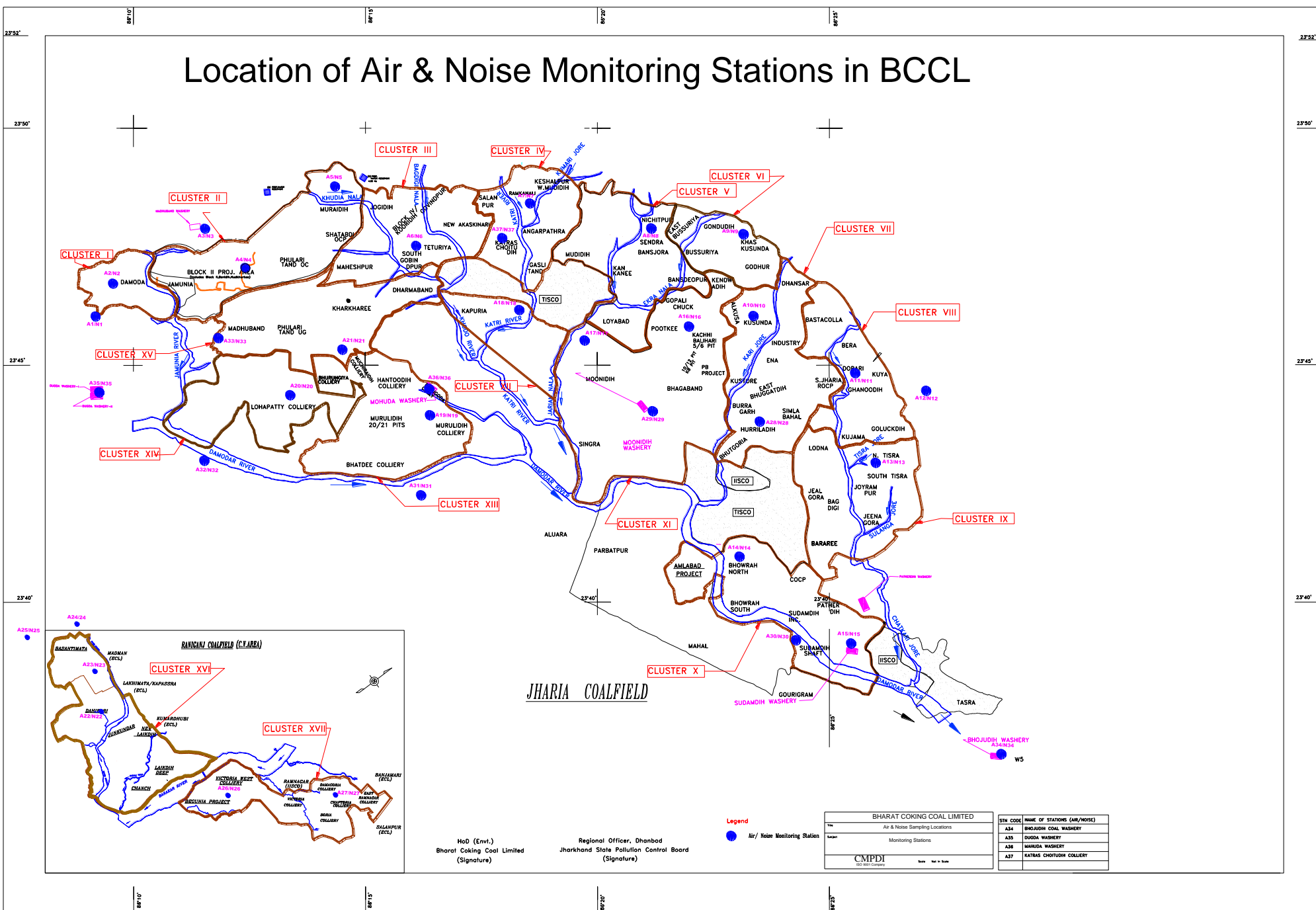
*\* Day Time: 6.00 AM to 10.00 PM, +Night Time: 10.00 PM to 6.00 AM.*

<sup>3</sup> Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed..........Dated 22.02.2017. Job No. 110310

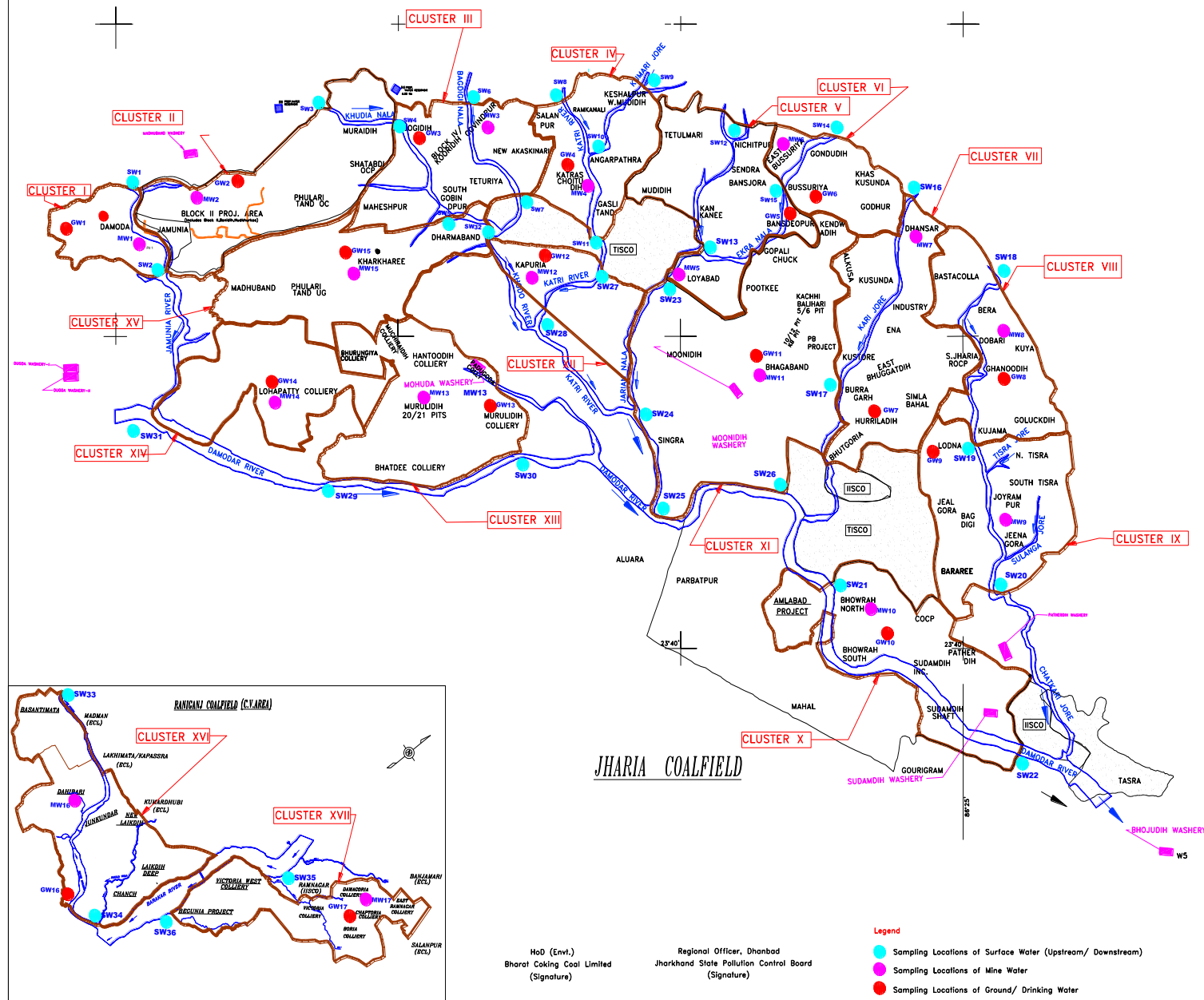
### Noise Level Monitoring Locations of Cluster II



# Location of Air & Noise Monitoring Stations in BCCL



# Water Sampling Locations in BCCL



## INDEX

Cluster	Surface Water (U/S, D/S)	Name of River/ Nala / Jore	Mine/ Effluent Water	Sampling Location	Ground Water	Sampling Location
I	SW1, SW2	Jamunia River	MW1	Damoda Area Block II OCP	GW1	Shutway Village
II	SW3, SW4	Khudra Nala	MW2		GW2	Joyrampur Village
III	SW4, SW5, SW6, SW7	Khudra Nala, Bagdi Nala	MW3	Govindpur Colliery	GW3	Jogidi Village
IV	SW8, SW11, SW9, SW10	Kari River, Kumari Jore	MW4	Chotudi	GW4	Kankane Village
V	SW12, SW13, SW15	Jarian Nala, Ekra Nala	MW5	Mudidi	GW5	Nichitpur
VI	SW14, SW15	Ekra Nala	MW6	East Bessura UGP	GW6	Bansjora Borewell
VII	SW16, SW17	Kari Jore	MW7	Dhanar UGP	GW7	Huriladi
VIII	SW18, SW19	Kash Jore	MW8	Dhanar UGP	GW8	Gharudi
IX	SW19, SW20	Kash Jore	MW9	Jeena UGP	GW9	Lodna
X	SW21, SW22	Damodar River	MW10	North	GW10	Bhowrah South
XI	SW23, SW24, SW25, SW26	Damodar River	MW11	Bhowrah UGP	GW11	Bhagbandh
XII	SW27, SW28	Kari River	MW12	Kapuri	GW12	Kapuri
XIII	SW29, SW30	Damodar River	MW13	Muridih (20/21)	GW13	Muridih
XIV	SW31, SW29	Damodar River	MW14	Lohapatti	GW14	Lohapatti
XV	SW5, SW32	Khudra Nala	MW15	Kharkharee UGP	GW15	Kharkharee
XVI	SW33, SW34	Khudra River	MW16	Dahbari OCP	GW16	Pallabari Village
XVII	SW35, SW36	Damodar River	MW17	Damodari Colliery	GW17	Chaptoria

Source: BHARAT COKING COAL LIMITED

Title: WATER SAMPLING LOCATIONS

Subject: MONITORING STATIONS

CMPDI

Scale: Not to Scale





# CSR Booklet

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## Cluster-II

### **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.

## Contents

1.0 INTRODUCTION .....	2
2.0 SCOPE .....	2
3.0 SOURCE OF FUND .....	2
4.0 ACTION PLAN FOR CORPORATE SOCIAL RESPONSIBILITY .....	3
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5.2 Health Awareness Programme .....	3
5.3 CSR Clinics.....	3
5.4 Civil work under CSR.....	5
6.0 COAL TRANSPORTATION PLAN.....	7
7.0 REHABILITATION AND RESETTLEMENT PLAN .....	8

## 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 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.

## 2.0 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.

## 3.0 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 MT, an amount to the tune of Rs. 1, 42, 55,000 will be used for the CSR works per year for Cluster-IV.

#### 5.0 STATUS OF CSR ACTIVITIES

##### 5.1 Medical Camps:

###### (A) During FY 2014-15:

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>

###### (B) During FY 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>



## 5.2 Health Awareness Programme:

(A) During 2014-15:

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

## 5.3 CSR Clinics :

(A) During FY 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>

(B) During FY 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>

### 5.4 Civil work under CSR:

#### (A) During 2014-15:

S. N.	Details	Award value (In Lac)	Remarks
1	Construction of PCC road at Gonduadih west under Mohanpur village (from Khalil Mahto home to Primary school).	3.98	25.01.2015 to 24.03.2015 (60 days)
2	Construction of Janaja shed at Ramakunda west under Amtand village	3.15	15.10.2014 to 14.12.2014 (60 days)
3	Construction of 1 no. chhathh ghat at Muraidih colony, Hirak road river side	3.01	15.10.2014 to 14.12.2014 (60 days)
4	Construction of Janaja shed at Muraidih colony near river of Hirak road	0.46	31.03.2014 to 29.04.2014 (30 days)
	PCC Road jhunu Rajwar House to Tarkeswar Gope House at Bakaspura Village Luti Pahari (Jhunu Tarkeshwar) Road Length:-	2.30	This is benefiting to approx. 200 families in this locality by all-weather connectivity.
	Making PCC Path from Manoj Matha House to Sahabuddin Ansari house at Ghunghusa Village (Mahato Shahbhuddin)	1.85	This is benefiting to approx. 300 families in this locality by all-weather connectivity
	Steps for Ghat at sarbandh near hirak chowk under B-II Area	2.67	This will ease in performing rituals by local villages of Dumara ,harina & Bada pandeydih.
	Cutting of earth from pond at Chaudhary bandh at Harina Basti, under B-II Area	19.22	This is benefiting to approx 5000 persons in this locality. This pond is used for multipurpose like irrigation, water for households drinking water for animals etc. it will also maintain the water level in locality.
	Drinking Water pipe line works in hadi basti at Bhamkanali.	0.44	This is benefiting to approx. 150 families in this locality
	Rep/Maint of Hand pump at Bara pandeydih ( 08 Nos).	0.26	This is benefiting to approx. 500 persons in this locality
	Development work at rehabilitation site at Bhimkanali.	6.45	This is benefiting to approx. 500 persons in this locality
	Construction of community hall at Bara Pandeydih Village Under Block-II Area	11.9	This is benefiting to approx. 1000 persons in this locality
	Surplus mine water supply from Xth seam & Madhuban quarry of B-II Area Khonathi Pond	400	This is a multipurpose project to provide water for irrigation & other agricultural use along with maintaining water availability throughout the year along with developing a tourist destination in long run.

**(B) During 2015-16:**

S.N.	Details	Award value (In Lac)	Remarks
1	Rep. Of Main road & Drain at Bakashpura rehabilitation site.	9.71	This is benefiting to approx. 1500 persons in this locality
2	Engagement of tankers for drinking water supply in nearby villages of B-II Area	1.9	This is benefiting to approx. 2000 families in Viallages like Benidih Baghmara, Luttipahadi, Harina, Kessurgarh, Rathand, Nudkhurkee, Pinalgarhia, Mandra.
3	Engagement of departmental tankers for drinking water supply in nearby villages of B-II Area as on need bais.	-	This is benefiting to approx. 2000 families in Viallages like Benidih Baghmara, Luttipahadi Kessurgarh, Madhuban Etc.

**(B) During 2016-17:**

S.N.	Details	Award value (In Lac)	Remarks
1	Construction and maintenance for 5 years of toilets in Government schools in Gumla District under Swachh Vidyalaya Abhiyan. 125 toilets in 69 schools were constructed.	191.67	This is benefiting to approx. 7500 students

**6.0 COAL TRANSPORTATION PLAN:** Cluster-II consists of mines of Block-II Area and Barora Area.

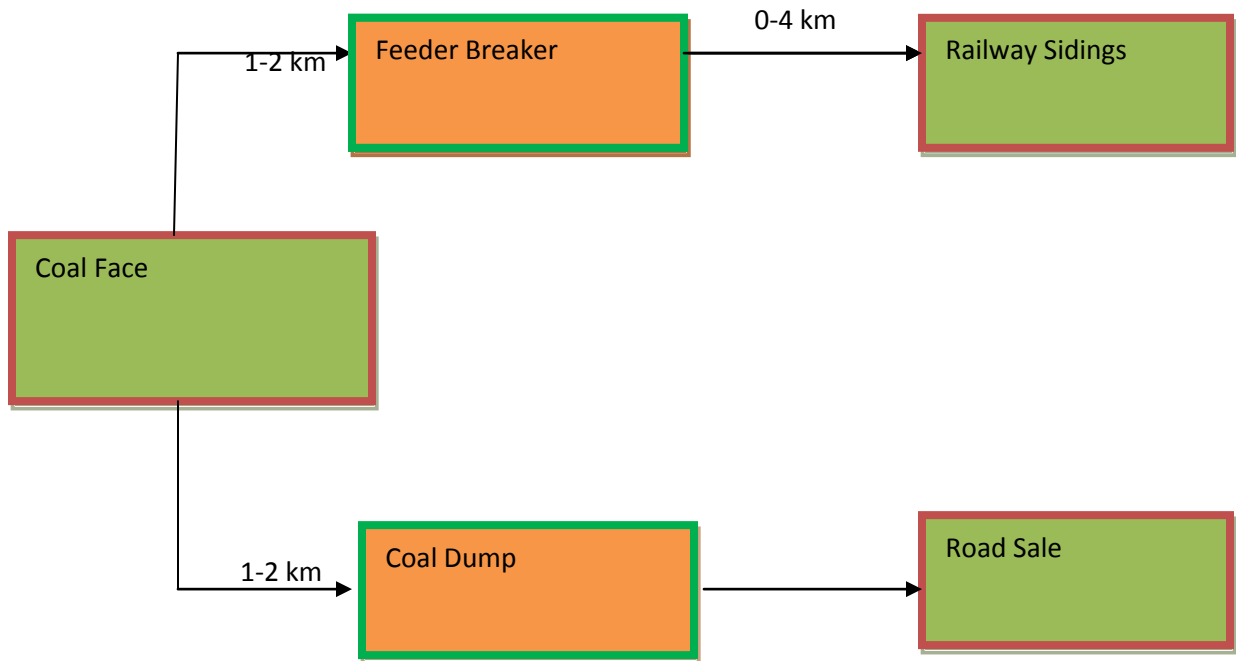


Fig: Coal transportation route



## 7.0 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 major consumers determines to a great extent the selection of mine sites. For reserves that are close to the surface, opencast mining has proven to be the most efficient mining method. Opencast mines require relatively large areas of land. Population growth, particularly in India's 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 companies 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, as per its 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 Rehabilitation and Resettlement (R&R) package for project affected persons to compensate for loss of livelihood. Apart from compensation for house site, house, trees, cow shed, cost of shifting etc., employment is also provided to land oustees. In addition to this, efforts are made to rehabilitate them by construction of houses, building roads, streets, schools, providing water etc. wherever feasible. However, demand for both more land compensation and better R&R package has been raised by project affected persons and has been highlighted in various Parliamentary Committees. Coal Companies often have to face representations and agitations by these land oustees who obstruct the smooth working 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 largely 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 viability. 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. However, increasingly subsidiaries will need to develop other ways and means to compensate land owners and others adversely affected by their projects and give them the option to choose which method of compensation best suits their needs. Greater emphasis will also need to be given to community requirements like schools, hospitals etc. Only proper 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 fulfill the ever increasing demand of coal for the economic development of the Country.

- 1 -

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-PRIW-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 enlisted 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 PAPs in line with Coal 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 PAPs and State government.

**(B). Environment Impact Assessment (EIA)** will be conducted as per any law, rule and regulation of the locality in which the land has been acquired.

**6. 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**

1. Only a 'Displaced' family / person shall be eligible for resettlement benefits.
2. A family/person shall be termed 'displaced' and hence eligible for resettlement benefits if such family/person has been a permanent resident and ordinarily residing in the project area on the date of publication of notification U/S 9 of CBA(A&D) 1957 / U/S 11 of LA Act, 1894/ Or both/ on the date of the land vested with the State/ Central government as the case may be.  
and  
(a) on account of acquisition of his/her homestead land / structure is displaced from such areas  
or  
(b) He/she is a homesteadless or landless family/person who has been/is required to be displaced.

**7. Census & Identification of displaced families:**

1. Within two months of publication of notice U/S 4(1) of the Land Acquisition Act or U/S 7(1) 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 officer certificate, electoral roll, ration card or school record.

<b>Category of Persons affected by the Project</b>	<b>Compensation and Rehabilitation entitlement option</b>
	<b>Provisions</b>
(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
	<p><b>A). Land Compensation</b> - 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 of land held under traditional rights by state authorities will be necessary.</p> <p>In addition to above Solatium will be paid as per provisions of the concerned Act / as imposed by the Concerned State Govt.</p> <p>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.</p> <p><b>(B): Employment provision:</b> Apart from payment of the land compensation, employment may be given in the following manner –</p> <ol style="list-style-type: none"> <li>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 .</li> <li>2) For every two acres of land one employment can be considered;</li> <li>3) Subsidiaries of CIL 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 or their dependent for employment under package deal or employment under Descending order system by preparing the list of eligible land oustees in the descending order of land lost subject to the cut off equivalent to the total number of permissible employments or any other method with the approval of the respective Board of the subsidiary.</li> <li>4) The land loser must be a domiciled resident/Mool Niwasi and the certificate to this effect shall be issued by the concerned State Authority</li> <li>5) The modalities for offering employment shall be such as may be approved by the Board of the Subsidiary companies as per the unique conditions of the subsidiary provided that -       <ol style="list-style-type: none"> <li>a) The initial employment shall be given with pay of Category-I pay scale of NCWA, with training period of 6 months.</li> <li>b) In the seniority list, the seniority of the appointee should be reflected in appropriate manner in order to keep the senior most as senior.</li> <li>c) The land loser trainees shall be posted as per requirement, including underground duties.</li> </ol> </li> </ol>



Category of Persons affected by the Project	Compensation and Rehabilitation entitlement option
	Provisions
	<p><b>(C ): Lumpsum Monetary Compensation –</b></p> <p>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 .</p> <p>2. Land losers who are offered employment as per principle specified in point No ( 8.(i)B ) 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.(i)B1).</p> <p>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.</p> <p>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 60 years of age or the life of the project for which the land has been acquired, whichever is earlier.</p> <p><b>Note:</b> A person receiving a job forgoes all claims to above compensation and a person receiving above compensation forgoes all claims to employment.</p>
(ii) Person whose homestead is acquired	<p>I. Compensation for homestead shall be paid as per the standard valuation method of the L.A Act. of the concerned State Govt.</p> <p>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.The compensation shall be paid to displaced persons only after vacation and demolition of the homestead/ work shed etc.</p> <p>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.</p>



<i>Category of Persons affected by the Project</i>	<i>Compensation and Rehabilitation entitlement option</i>
	Provisions
(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 for lack of experience, the said co-operative will be facilitated by awarding small jobs to acquire experience after relaxation of the provisions of the Manual pertaining to experience with approval of the Subsidiary Boards. Subsequent jobs may be awarded after getting report of the timely 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 cultural identity.</li> <li>- Tribal affected family will be given one time financial assistance of 500 days of MAW for loss of customary right or usages of forest produce. Loss of customary rights needs to be 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 Sabhas;
- IV. To expedite issue of domicile certificates and other necessary documentation 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)