BHARAT COKING COAL LIMITED
(A Subsidiary of Coal India Ltd.)
Office of the General Manager
Govindpur Area No. III
PO- Sonardih, DHANBAD – 828125
Contact No: 0326-2392162 email- camgovindpur@bccl.gov.in

Ref: BCCL: AR.III: GM: 16: 522 **Dated: 30.11.2016**

To
The Director(s)
Ministry of Environment, Forest and Climate Change,
Govt. Of India
Regional Office (ECZ), Bungalow No. A-2, Shyamali Colony
Ranchi – 834002

Sub: - Six monthly Reports on Implementation of environmental measures for the period from April 2016 to September '16 in respect of Cluster III group of mines EC Order no. J-11015/213/2010-1 A.II (M) dated 06.02.13.

Dear Sir,

Enclosed please find herewith six monthly Reports on Implementation of environmental measures for the period from April 2016 to September 2016 in respect of Cluster III group of mines EC Order no. J-11015/213/2010-1 A.II (M) dated 06.02.13 for your kind perusal.

Yours faithfully,

General Manager
Govindpur Area, BCCL

Copy To:-

1. Director, IA monitoring cell,
   Paryavaran Bhawan CGO Complex, New
2. HOD (Envt.) BCCL, Koyla Bhawan, Dhanba
3. Addl. General Manager, Govindpur Area.
4. Nodal Officer (Envt.), Govindpur Area.

OIC

SP SONARDIH SO (828125)
EJ332352228IN
Counter No:1,OP-Code:002
To:THE DR IM MONI,DELHI
DELHI, PIN:110003
From:O/O GEN MANAGER , SONARDIH
Wt:150grams,
Amt:69.00 ,03/12/2016 ,08:32
Taxes:Rs.9.00<<Track on www.indiapost.gov.in

भारतीय डाक
India Post

SP SONARDIH SO (828125)
EJ332352470IN
Counter No:1,OP-Code:002
To:THE DR MINISTRY,RANCHI
RANCHU, PIN:834002
From:O/O GEN MANAGER , SONARDIH
Wt:150grams,
Amt:40.00 ,03/12/2016 ,08:33
Taxes:Rs.5.00<<Track on www.indiapost.gov.in>>

भारतीय डाक
India Post

COMPLIANCE OF EC CONDITIONS: - CLUSTER-III

EC Letter No. J – 11015/213/2010- IA. II (M), Dated 06.02.2013

S. no.	A. Specific Conditions by MOEF:	Compliance
i	The maximum production from the two opencast sections in the cluster shall not exceed beyond that for which environmental clearance has been granted	The approved normative production and peak production are 2.10 MTPA & 2.73 MTPA respectively. There is a proposed addition of HEMM projects in cluster-III which will lead to increase in production thus changes to the present EC has to be made for which mine plan is being prepared.
ii	The measure to identify in the Environmental Plan for Cluster- III 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 activities are dovetailed with compliance of environmental clearance conditions.
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 III shall be undertaken. Expertise available internationally could also be utilized for control of fire in Jharia Coalfields and for their reclamation and to further minimize time for fire and subsidence control. Isothermal mapping using thermal imaging has been got done by NRSA. Measures would be taken to prevent ingress of air (ventilation) in such areas, which may re-start fresh fires.	NRSC has been engaged for the purpose and NRSC has submitted their final report. Fire affected area has been reduced from 9.00 KM2 (2006) to 2.18 KM (2013). For further dealing of fire and subsidence action has been taken and working as per the strategic plan of digging out of fiery coal followed by reclamation. Further action is being taken as specified in EC and as per Jharia Master Plan. Fire patches are under operation to dig out the fiery coal and combustible materials to save the coal from burning and to stop further spread of the fire. Once the fiery coal is dug-out/excavated there will be no more chance of re-starting of fresh/ spreading of fire into other areas.
Iv	Underground mining should be taken up after completion of reclamation of Opencast mine area.	It shall be complied.
V	The OB material should be crushed like sand and be used for stowing in underground mines.	The methods of utilization of OB material for stowing are being explored. It will be used when pillar extraction below important surface features/town/village etc. will be carried out.

vi	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-III shall be drawn up and implemented. The schedule of backfilling should be clearly brought out and submit the same to MoEF.	Calendar plan has been prepared and enclosed as annexure-B.1 Mine closure plan as per the guidelines of Ministry of Coal is finalized and circulated by Regional Institute –II, Central Mine planning and Design Institute, Dhanbad. The financial provisions required for the implementation of mine closure plan are being kept in accounts.
vii	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. Embankments have been constructed as specified in EC
viii	The rejects of washeries in Cluster –III should be send to FBC based plant.	Coal washery does not exist in this cluster at present.
ix	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 shall be complied. Action is being taken to control, mine fires including old OB dump areas as specified in Jharia Master Plan and the mining is being done as per the guidelines and permissions of Directorate General of Mines Safety (DGMS).
x	There shall be no external OB dumps. OB produce from the whole cluster will be 80Mm^3. OB from 2 OCP in mixed mines shall be backfilled. At the end of the mining there shall be no void and The entire mined out area shall be re-vegetated. Areas where opencast mining was carried out and completed shall be reclaimed immediately thereafter. It was observed that most of the OBs are not reclaimed and abandoned. The proponent should dump all the OB material in abandoned mines.	It is being complied. Action is being taken as specified in EMP for Backfilling of OB concurrent with and reclaimed. Two backfilled sites have been changed into ecological restoration parks and the process is showing good results.
xi	Number of voids present in cluster – III at the end of mining should be backfilled up to ground level and no void should be left at the end of mining.	It shall be complied.
xii	A detailed calendar plan Of production with the plan for OB dumping and backfilling (for O/C mines) and reclamation and final mine closure plan for each mine of cluster-III shall be drawn up and implemented. The schedule of backfilling should be clearly bought out and submit the same to MoEF.	Calendar plan of production has been formulated and hereby enclosed in annexure – 'B1,' OB dumping and backfilling (for O/C mines) and reclamation is already under preparation and CMPDIL has prepared a final mine closure plan.

xiii	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.	It is being followed. Embankments have been constructed as specified in EC
xiv	Active OB dumps near water bodies and rivers should be rehandled for backfilling abandoned mine voids. However, those which have been biologically reclaimed need not be disturbed.	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 and as per the action plan of Prof. CR Babu ,Professor Emirates CEMDE, Delhi University. Details of programme of eco-restoration are enclosed as annexure-C.
xv	Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation. A total area of 854.72 ha shall be reclaimed and afforested.	It shall be complied. Yearly plantation is being done for development of green belts as per EC.
xvi	Details of transportation, CSR, R&R and implementation of environmental action plan for the clusters-III should be brought out in a booklet form within a year and regularly updated.	It shall be complied.
xvii	Specific Mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted area and relevant for Cluster III shall be implemented.	Dhanbad Action Plan has been prepared in consultation with Jharkhand Pollution Control Board for entire BCCL and not cluster wise. It is being implemented comprehensively for all the mines of BCCL. Some of the salient actions of this cluster are as under: 1. Construction of pucca road 2. Construction of water reservoir for mine water utilization 3. Plantation. 4. Transportation of coal in covered vehicles
xviii	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	The work of monitoring of ambient environment is being done by Central Mine Planning and Design institute (CMPDIL).

	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_{10} and $PM_{2.5}$) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate Mitigative measures could be taken.	
xix	The Plan for conveyor-cum–rail for Cluster-III should be dovetailed with Jharia Action Plan. The Committee desired that road transportation of coal during Phase–I should be by mechanically covered trucks, which should be introduced at the earliest. Coal dispatch shall be diverted from the present rail sidings to Rapid Loading System (RLS) soon after the construction and commissioning of the RLS at Maheshpur is completed. The railway siding order issued and same would come in 3 years. The details of same should be provided to ministry. The mode of transportation of coal by truck till Railway Siding should be by mechanically covered trucks	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 covered vehicle with a tarpaulin cover.
xx	3756 nos of PAF's should be rehabilitated at cost of Rs 27012.66 Lakhs as per the approved Jharia Action Plan.	It is being followed as per the approved Jharia action plan.
xxi	Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of	The work of monitoring of ambient environment including ground water monitoring is being done by Central Mine Planning and Design institute (CMPDIL). Monitoring stations have been set up and Central Mine Planning and Design institute (CMPDIL) has been keeping a constant check.

	water table indicates a declining trend.	
xxii	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.	At present, only one depillaring district is operational at Maheshpur UG in Cluster III and others are development districts. Regular monitoring of subsidence over depillared area is being done as per stipulation.
xxiii	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.	Sufficient coal pillars have been left around air shafts as per the statutes and DGMS guidelines.
xxiv	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	Identification of high root density Plant and its plantation in subsidence prone area is in the process. The plantation programme will include such plants.
xxv	Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.	It is complied.
xxvi	Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.	It is being followed. Sufficient barriers are left for saving the surface installation and infra structures as per the statute and DGMS guidelines.
xxvii	No depillaring operation shall be carried out below the township/colony.	It is followed.
xxviii	A detailed CSR Action Plan shall be prepared for Cluster III group of mines. Specific activities shall be identified for CSR for the budget of Rs 139 Lakhs per year@ Rs 5/T of coal provided for CSR for 2012-2013 and Rs. 5/T of coal as recurring expenditure. The 491.91ha of area within Cluster III ML existing as waste land and not being acquired shall be put to productive use under CSR and developed with fruit bearing and other useful species for the local communities. Third party evaluation shall be got carried out regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integrated with activities being taken up under	BCCL is implementing CSR activities. The details of activities are as enclosed in Annexure-E. A detailed project specific CSR Action Plan shall be formulated and for this purpose, BCCL has approached TATA INSTITUTE OF SOCIAL SCIENCES, MUMBAI which is also the focal agency of the National CSR Hub. TISS, Mumbai has informed that the process of interviewing, short listing and selection of Program Managers and Program Officers has been completed and their Officers are expected to report on field duty soon.

	CSR. The details of CSR undertaken along with budgetary provisions for the village-wise various activities and expenditure thereon shall be uploaded on the company website every year. The company must give priority to capacity building both within the company and to the local youth, who are motivated to carry out the work in future. The gap/space available between the entire mine area should be suitably planted with native species. Plantation should also be made in vacant area and along the road side so as to reduce dust pollution.	
xxix	Central recreation park with herbal garden should be developed for use of all inhabitants.	Being complied. Action has already been taken for identification of land for development of herbal garden for the inhabitants/ nearby society under the CSR activity of the company.
xxx	The mine water should be treated properly before supply to the villager.	Mine water has been channelized through pipelines and through delivery in to the ponds for it is for the community and irrigation purposes. Drinking water is being purchased from the Mineral Area Development Authority (MADA). Further for the utilization of mine water following actions has been taken by the company : 1. **Installation of Pressure filters:** BCCL has installed 25 pressure filter plants of total capacity of 16 MGD at the cost of Rs. 2.75 crores to meet the drinking water requirements in the area. Further installation of 28 more pressure filters with the capacity of 5 MGD are in the process. 2. An R&D/ pilot project taken up by CIMFR, Dhanbad at Putki colliery for mine water treatment for its utilization for drinking water is also being supported. CIMFR has further requested to BCCL for Rs 20 Lakh/annum for its maintenance and bottling of purified drinking water. This fund will be met through CSR fund of BCCL 3. BCCL is in the process of entering into multiple Patents of this scheme and technology with CIMFR for further replication of this scheme in other mines to use mine water fully. 4. There is a water filter plant already in operation at Sinidih. After filtration, drinking water is being supplied to different colonies and villages for drinking purposes.
xxxi	Details of transportation, CSR, R&R and implementation of environmental action plan for each of the clusters-III should be brought out in a booklet form within a year and regularly updated.	It shall be complied.
xxxii	Central recreation park with herbal garden should be developed for use of all inhabitants.	Being complied. Action has already been taken for identification of land for development of herbal garden for the inhabitants/ nearby society under the CSR activity of the company.

xxxiii	The mine water should be treated properly before supply to the villager.	Mine water has been channelized through pipelines and through delivery in to the ponds for it is for the community and irrigation purposes. Drinking water is being purchased from the Mineral Area Development Authority (MADA). Further for the utilization of mine water following actions has been taken by the company : 1. **Installation of Pressure filters:** BCCL has installed 25 pressure filter plants of total capacity of 16 MGD at the cost of Rs. 2.75 crores to meet the drinking water requirements in the area. Further installation of 28 more pressure filters with the capacity of 5 MGD are in the process. 2. An R&D/ pilot project taken up by CIMFR, Dhanbad at Putki colliery for mine water treatment for its utilization for drinking water is also being supported. CIMFR has further requested to BCCL for Rs 20 Lakh/annum for its maintenance and bottling of purified drinking water. This fund will be met through CSR fund of BCCL 3. BCCL is in the process of entering into multiple Patents of this scheme and technology with CIMFR for further replication of this scheme in other mines to use mine water fully. 4. There is a water filter plant already in operation at Sinidih. After filtration, drinking water is being supplied to different colonies and villages for drinking purposes.
xxxiv	Details of transportation, CSR, R&R and implementation of environmental action plan for each of the clusters-III should be brought out in a booklet form within a year and regularly updated.	It shall be complied.
xxxv	Mine discharge water shall be treated to meet standards prescribed 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.	The work for keeping a check on the mine water quality is being done by Central Mine Planning and Design institute (CMPDIL). The quality of water is within prescribed standards.
xxxvi	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 due to dewatering of mine.	No ground water is being utilized for the purpose of industrial use of the water. Mine water has been channelized through pipelines and through delivery in to the ponds for it is for the community and irrigation purposes. Drinking water is being purchased from the Mineral Area Development Authority (MADA). Further for the utilization of mine water following actions has been taken by the company 1. **Installation of Pressure filters:** BCCL has installed 25 pressure filter plants of total capacity of 16 MGD at the cost of Rs. 2.75 crores to meet the drinking water requirements in the area. More pressure filters shall be put in to operation.

		2. **Rain water Harvesting:** to catch run-off water in colonies Rain water Harvesting is being done. BCCL has already awarded work for 138 houses at Koyla Nagar Township covering surface area of 14450 sq. mts. of roof top with total cost of Rs77.36 lakhs. It has been estimated that the system will recharge 13150 cum of water per annum to the ground water.
xxxvii	The void shall be converted into a water reservoir of a maximum depth of 15-20 m and shall be gently sloped and the upper benches of the reservoir shall be stabilized with plantation and the periphery of the reservoir fenced. The abandoned pits and voids should be backfilled with OB and reclaimed with plantation and or may be used for pisciculture.	Continuous process of the backfilling has been adopted. A part of the void will be converted into the water body as specified in EC.
xxxviii	Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.	The work of monitoring of ambient environment including ground water monitoring is being done by Central Mine Planning and Design institute (CMPDIL). The monitoring stations have been set up and proper check is being maintained in this regard.
xxxix	ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to confirm to prescribe standards in case discharge into the natural water course.	Construction of ETP/ Oil grease Trap is being taken up.
xl	The location of monitoring stations in the Jharia coalfield should be finalized in consultation with Jharkhand State Pollution Control Board.	It will be complied.
xli	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	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. 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."

	the report submitted to MOEF and its Regional office at Bhubaneswar.	
xlii	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.	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.
xliv	A separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.	A full-fledged Environment Department, headed by a HoD (Environment) along with a suitable qualified multidisciplinary team of executives which includes Environment, Mining, Excavation, Civil, Survey ,Electrical & mechanical, Forestry disciplines executives and technicians 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 Headquarters levels. GM (Environment) at head quarter level, co-ordinates with all the Areas and reports to the Director (Technical) and in turn he reports to the CMD of the company. The team is multidisciplinary and very much motivated under the guidance of company's Director (Technical) and CMD. Further capacity building at both corporate and operating level is being done.
xlv	Corporate Environment Responsibility: a) The Company shall have a well laid down Environment Policy approved by the Board of Directors. b) The Environment Policy shall prescribe for standard operating process/ procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions. c) The hierarchical system or Administrative Order of the company to deal with	 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. Complied. A hierarchical system of the company to deal with environmental issues from corporate level to mine level already exists.

	environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished. d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.	Being complied.
B	**General Conditions by MOEF::**	
i	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	Being followed.
ii	No change in the calendar plan of production for quantum of mineral coal shall be made.	Being followed. Production is being done well within the peak production capacity as per EC.
iii	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM_{10}, $PM_{2.5}$, SO_2 and NO_x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.	Establishment of Four ambient air quality monitoring stations by CIMFR has been completed. The work for monitoring of ambient environment is being done by Central Mine Planning and Design institute (CMPDIL).
iv	Data on ambient air quality (PM_{10}, $PM_{2.5}$, SO_2 and NO_x) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.	The work for monitoring of ambient environment is being done by Central Mine Planning and Design institute (CMPDIL). The stations for air quality check have been set and constant check is being maintained by CMPDIL.
v	Adequate measures shall be taken for	Being Complied.

	control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	
vi	Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	The work for monitoring of ambient environment is being done by Central Mine Planning and Design institute (CMPDIL). Monitoring stations have been set up by CMPDIL and constant check is being maintained by them.
vii	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	Being Complied.
viii	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.	Establishment of monitoring stations is already in process and Jharkhand State Pollution Control Board is being pursued in this regard. The work for monitoring of ambient environment is being done by Central Mine Planning and Design institute (CMPDIL).
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. A separate full-fledged Human Resource Development Deptt. Is conducting regular training programme on these issues. Apart from this Vocational Training Centers are existing in all the Areas of BCCL which provide periodical training on the safety and occupational health issue to each of the workers working in the mines.
x	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.	Initial Medical Examination (IME) and Periodical Medical Examination (PME) of all the personnel is carried out as per the Statutes and Director General of Mines Safety (DGMS) guideline.
xi	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior	A full-fledged Environment Department, headed by a HoD (Environment) along with a suitable qualified multidisciplinary team of executives which includes Environment, Mining, Excavation, Civil, Survey ,Electrical & mechanical, Forestry disciplines executives and

	Executive, who will report directly to the Head of the company.	technicians has been established in Headquarters. They are also trained in ecological restoration, sustainable development, rainwater harvesting methods etc. At the project level, one Executive in each area has also been nominated as Project Nodal Officer (Environment) and is also entrusted with the responsibility of compliance and observance of the environmental Acts/ Laws including environment protection measures .The activities are monitored on regular basis at Area and at Head quarters levels. GM (Environment) at head quarter level, co-ordinates with all the Areas and reports to the Director (Technical) and in turn he reports to the CMD of the company. The team is multidisciplinary and very much motivated under the guidance of company's Director (Technical) and CMD. Further capacity building at both corporate and operating level is being done.
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.	A separate fund under the environmental protection measures has already been allocated.
xiii	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in.	It has been complied. Advert in local newspaper is enclosed as annexure-G.
xiv	A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.	Complied.
xv	A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be	Complied.

	displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.	
xvi	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM_{10}, $PM_{2.5}$, SO_2 and NO_x (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.	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.	Shall be complied.
xix	The Environmental statement for each financial year ending 31 March in Form – V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules,1986,as amended subsequently, shall also be uploaded on the company's website along with	Being Complied.

	the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by E-mail	
C	**Other Conditions by MOEF:**	
i	The Ministry or any other competent authority may stipulate any further condition for environmental protection.	Agree.
ii	Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.	Agree.
iii	The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.	It is being complied.
iv	The Environmental Clearance is subject to the outcome of the Writ Petition filed by M/S Bharat Coking Coal Limited (BCCL) in response to the closure orders issued by the Jharkhand State Pollution Control Board which is pending in the Jharkhand High Court.	Agree.

Annexure-A

BCCL

Bharat Coking Coal Limited
(A Subsidiary of Coal India Limited)
Office of HOD(Environment)
Koyla Bhawan, Koyla Nagar
Dhanbad 826005

Ref. No.BCCL/HOD(Env)/F- MP/13/ 610 Dated 21.05.2013

To,

Dr Vinod Kumar,
Group Head, Geosciences group
Sc/Eng-SG
National Remote Sensing Centre
Indian Space Research Organization
Dept of Space,Govt Of India,Balanagar,Hyderabad
Andhra Pradesh-500625

Subject : Regarding proposal for "Delineation of Surface Coal Fire and associated Land Subsidence in Jharia coalfield, Jharkhand using satellite based remote-sensing techniques at a cost of Rs 19.70 Lakhs submitted by e-mail on 15.05.2013

D/Sir,

We are in receipt of the aforesaid proposal, sent by email on 15.05.2013, covering two components of the scope of study and subsequent communication by BCCL vide letter no. BCCL/D (T) Op/F-Env/2012/148(A) dated 11.02.2013:

Part 1: Coal Fire mapping of Jharia Coalfield using Thermal Infra-red data – for a cost of Rs. 6,70,721=00. The study is proposed to be completed within 8 months and

Part 2: Land subsidence mapping of Jharia Coalfield using Interferometric SAR data - for a cost of Rs. 12,98,571=00. The study is proposed to be completed within 12 months.

Competent authority of BCCL has approved both the two components as above .You are therefore requested to submit your invoice for 90% amounting to 17.73 Lakhs, of the cost of the project Rs 19.00 Lakhs at the earliest for placing the work order and releasing the 90% amount.

Thanking you,

Yours faithfully,

21/5/13

HOD (Environment)

Annexure-B

1. CALENDER PROGRAMME FOR OB DUMPING

- Backfilling programme : (in M cu. m)

YEAR	New Akashkinari OCP	Block- IV OCP	TOTAL
2015-16	2.76	5.12	7.88
2016-17	3.52	5.24	8.76
2017-18	4.04	5.48	9.52

Annexure-C

5. FIVE YEAR ECOLOGICAL-RESTORATION PLAN OF BCCL

Year	Barora	Block-II	Govindpur	Katras	Sijua	Kusunda	PB UG	Basta-kola	Lodna	EJ	CV
	CLUSTER- I & II		CLUSTER- III	CLUSTER- IV	CLUSTER- V	CLUSTER- VI, VII VIII & XI			CLUSTER- IX	CLUSTER- X	CLUSTER- & XVI
2014-15	10.80	7.40	4.00	4.60	2.00	6.00		10.00	4.80	3.56	2.00
2015-16	10.00	6.oo	4.50	6.00	2.00	6.00	-	7.50	3.5	6.49	2.00
2016-17	9.50	5.00	5.00	8.00	2.00	6.00	-	7.50	3.5	3.22	2.00
Total	39.80	22.00	13.50	22.00	14.00	20.00	2.00	35.00	15.00	22.00	15.00

2.Eco – Restoration to be done through Nodal agency of Centre of Excellence programme of MoEF. (2014-15)

Sl. No.	Cluster	Name of Area	Name of the Project/Site	Location	Area in Ha	Availability of water
1.	**Cluster** II	Barora.	Phularitand	Adjacent of KKC – Link siding	2.50	Water will be provided from adjacent Incline(about 150m)
				Total	**2.50.**	
2.	**Cluster** II	Block-II.	Block-II.	Beside the Explosive Magazine	2.00+1.60	Water will be provided from adjacent Pipeline which is feeding water to filter plant(about 150m)
				Total	**3.60.**	
3.	**Cluster-**III	Govindpur	Akashkinaree	Beside the Explosive Magazine	4.0	Water is being provided by water tankers into the site reservoir which has been constructed for this purpose
				Total	**4.0**	
4.	**Cluster** IV	Katras.	AKWMC OCP.	1. Near Explosive Magazine.	3.40	Water will be provided from adjacent Pipeline which is feeding water to adjacent colony. (about 450m)
				Total	**3.40**	
5.	**Cluster** VI	Kusunda.	Khas Kusunda	Ghanudih	2.00	Water will be provided from nearby CHP water spraying point (about 350m)
				Total	**2.00.**	
6.	**Cluster** IX	Lodna.	North Tisra & South Tisra	Beside temporary R & R Site / In front of Work shop.	6.00	Water will be provided from proposed R&R site(about 200m)
				Total	**6.00**	
7.	**Cluster** X	EJ (Bhowra & Sudamdih).	Bhowra(South)	1. OB dump of water pumping plant of Bhowra(south) 3 pit OCP	8.73.	Water will be provided from river side pump (already in operation). About 800m pipe is require.

				Total	**8.73.**	
8.	cluster XIII	W.J.Area	Murulidih colliery		4.20	Water will be provided from adjacent Pipeline which is feeding water to adjacent colony. (about 500m)
				Total	**4.20**	
9.	cluster VII & VIII	Bastacola.	South Jharia/ R.O.C.P	above the Bank of Chatkari Jore	10.00	Water will be provided from adjacent jore or a bore well may be installed.
					10.00	
10.	Cluster XVI	C.V.Area	Abundant Junkundar OCP.	Embankment of Junkundar	13.00	Water will be provided from pond

Annexure- E

CSR ACTIVITIES OF BCCL

Bharat Coking Coal Limited (BCCL) is committed to good corporate citizenship and makes constant efforts to build and nurture long lasting relationships with members of the society in general and it's peripheral communities in particular.

BCCL is taking up activities from the HQ level and through its administrative areas for the implementation of CSR activities. For this purpose A CSR cell is functioning which is headed by General Manger (Welfare) under the direct control of Director (Personnel) of the company.

The CSR activities are specific to the village, depending on the need assessed for the people by local Hon'ble M.Ps and M.L.As. Further as suggested by the MOEF Committee, a detailed project specific CSR Action Plan shall be formulated and for this purpose, BCCL has approached TATA INSTITUTE AND SOCIAL SCIENCES, MUMBAI which is also the focal agency of the National CSR Hub. CSR Action Plan shall be formulated for the whole Jharia Coalfield and also project-wise which will include need-based/ stakeholder base line survey, monitoring, evaluation, auditing, etc.

The CSR activities presently being done by BCCL

- To meet the acute shortage of drinking water in peripheral villages' drinking Water is provided through deep borewells, tubewells, pumps/motors, in the peripheral villages of BCCL. Water supply through pipeline, through water tanker is provided also to the villages.
- **Education**: BCCL adopts a multi-pronged approach to promote quality education in backward areas. The measures taken by BCCL comprise Construction, Extension, and Renovation of school buildings etc are done to promote quality education in the nearby villages. BCCL is Extending financial aid for educational facilities to 83 nos. Private Committee Managed schools. Measures are taken to promote women literacy and carrier development.
- **Health Care**: BCCL Conducts medical/health camps for dwellers of peripheral villages for rendering free medical consultancy. CSR Clinics, wellness clinics, artificial limbs centers are organized for the benefit of the needy section of the society.. Mobile medical vans are deployed as special arrangement for medical services. AIDS awareness camps are organized as special drive to develop awareness and to render free consultancy.
- **Occupational health**: awareness programme are organized.
- **Other Welfare Activities**: this includes Construction / renovation of Community Halls, construction / repair of roads, construction of Health-sub centres, construction of drain, construction of Chhat Ghat in the ponds, Construction of Boundary wall, providing Choupal for community gatherings, Installation of road side Water Kiosks during summer etc.
- **Mashla Chakki centres:** Mashla Chakki centres are established with machines to promote self-employment.
- **Blankets**: During winter, Blankets are distributed among poor section of the society.
- **Sports & Cultural**: Various activities are organized to propagate sports and cultures. Sports/games items and instruments are also provided. To promote sports, children parks are constructed.

- **Village adoption**: Lahbera – A SC/ST village in Dhanbad has been adopted for its all-round development and a number of development activities have been carried out.
- **Skill development training programs by BCCL for Project Affected persons, fire affected persons and nearby communities**: Bharat Coking Coal Limited (BCCL) has signed a Memorandum of Understanding with Construction Industry Development Council (CIDC), New Delhi, a body promoted by Planning Commission, on 20.03.2012 for employment linked training program in the Construction Sector for poor and downtrodden people of the Jharia coalfield including project affected persons and fire affected people. BCCL in coordination with the CIDC is identifying the project affected persons to undergo the required training programs to be conducted by CIDC.

  In this regard BCCL will bear the training cost @ Rs.42960/ per candidate which includes all expenses including lodging and boarding and after training the CIDC has to ensure a minimum of 75 % of sustainable placement for a period of six months. In case of placement below 75%, pro rata payment is to be made. All training are mandatorily residential. In the year 2012-13 5000 youths will be trained and in the subsequent years no. Of trainees will be scaled up @ 15% per annum.

****

ANNEXURE – G

झरिया के लोगों ने कहा

भारत कोकिंग कोल लिमिटेड
(कोल इण्डिया लिमिटेड का एक अंग)

शुद्धि पत्र

... 1/12-13/1477 दिनांक: 21.02.2013 ... 12 (बारह) महीने होंगे।

भारत कोकिंग कोल लिमिटेड
(कोल इण्डिया लिमिटेड का एक अंग)

... भारत कोकिंग कोल लिमिटेड का समूह (Cluster) ... (Environmental Clearance) प्रदान किया जा चुका है।

क्र. सं.	समूह (Cluster) का नाम	स्वीकृति आदेश संख्या एवं तिथि
1.	समूह (Cluster) I : ...	जे-11015/93/2009-आई. ए. II (एम) दिनांक : 6 फरवरी 2013
2.	समूह (Cluster) II : ...	जे-11015/38/2011-आई. ए. II (एम) दिनांक : 6 फरवरी 2013
3.	समूह (Cluster) III : ...	जे-11015/213/2010-आई. ए. II (एम) दिनांक : 6 फरवरी 2013
4.	समूह (Cluster) IV : ...	जे-11015/212/2010-आई. ए. II (एम) दिनांक : 6 फरवरी 2013
5.	समूह (Cluster) V : ...	जे-11015/01/2011-आई. ए. II (एम) दिनांक : 11 फरवरी 2013
6.	समूह (Cluster) VII : ...	जे-11015/238/2010-आई. ए. II (एम) दिनांक : 6 फरवरी 2013
7.	समूह (Cluster) X : ...	जे-11015/380/2010-आई. ए. II (एम) दिनांक : 6 फरवरी 2013
8.	समूह (Cluster) XVI : ...	जे-11015/185/2010-आई. ए. II (एम) दिनांक : 6 फरवरी 2013
9.	समूह (Cluster) VIII : ...	जे-11015/298/2010-आई. ए. II (एम) दिनांक : 13 फरवरी 2013

... "http://envfor.nic.in" ... "http://www.bccl.gov.in" ...

ह0/-

लोक सुनवाई की सूचना

सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार द्वारा बिहार राज्य के अन्तर्गत राष्ट्रीय उच्च पथ संख्या-30A फतुहा-बाढ़ खण्ड को दो लेन पक्की पटरी सहित चौड़ीकरण परियोजना का प्रस्ताव है। इसकी कुल लम्बाई लगभग 72.380 कि0मी0 है। यह उच्च पथ पटना जिला के फतुहा से प्रारम्भ होकर नालंदा जिला के [illegible] हरनौत होते हुए बाढ़ (पटना) तक जायेगी। इस राजमार्ग में तीन बाईपास क्रमशः दनियावाँ, हरनौत एवं बाढ़ में प्रस्तावित है। [illegible] परियोजना की कुल लागत 420.70 करोड़ है। इस परियोजना मार्ग में कोई राष्ट्रीय उद्यान, वन-जीव अभ्यारण्य नहीं है।

पर्यावरण एवं वन मंत्रालय, भारत सरकार के पर्यावरणीय प्रभाव मूल्यांकन (ई.आई.ए.) अधिसूचना, 2006 एवं [illegible] परियोजना की पर्यावरणीय स्वीकृति हेतु ई.आई.ए. रिपोर्ट तैयार किया गया है [illegible] ई.आई.ए. प्रतिवेदन एवं ई.आई.ए. सार-प्रतिवेदन को [illegible] जिला परिषद एवं महाप्रबंधक, जिला उद्योग केन्द्र के कार्यालयों के साथ-साथ पर्षद मुख्यालय, पटना में कार्यालय कार्य दिवस के दौरान देखी जा सकती है। [illegible] अपना सुझाव/प्रतिक्रिया इस सूचना के प्रकाशित होने के 30 दिनों के अन्दर पर्षद को उपलब्ध करा सकते हैं।

स्थानीय जनता की प्रतिक्रिया/सुझाव आमंत्रित करने हेतु लोक सुनवाई कार्यक्रम निम्नवत है :-

दिनांक	समय	लोक-सुनवाई का स्थल
05.04.2013 (शुक्रवार)	3.00 बजे अपराह्न	प्रखंड कार्यालय, हरनौत, नालंदा
06.04.2013 (शनिवार)	3.00 बजे अपराह्न	प्रखंड कार्यालय, बाढ़, पटना

सभी संबंधित से अनुरोध है कि उपरोक्त कार्यक्रम में उपस्थित होने का कष्ट करेंगे।

सदस्य-सचिव

BIHAR

बिहार राज्य प्रदूषण नियंत्रण पर्षद

बेल्ट्रॉन भवन, शास्त्रीनगर, पटना - 800 023
दूरभाष नं0-0612-2281250 / 2282265, फैक्स-0612-2281050
वेबसाईट-http://bspcb.bih.nic

क्षेत्रीय कार्यालय फोन नं. 01482-241[illegible]

राजस्थान राज्य प्रदूषण नियन्त्रण मण्डल

18, आजाद नगर, पन्नाधाय सर्किल, भीलवाड़ा

क्रमांक/क्षेत्र भील/[illegible] दिनांक

पर्यावरणीय स्वीकृति हेतु लोक सुनवाई के लिए आम सूचना

1. सर्वसाधारण को सूचित किया जाता है कि मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना क्रियान्वयन इकाई, ए 11, चन्द्रकिरण, [illegible] कॉलोनी, ब्यावर ने प्रस्तावित राष्ट्रीय राजमार्ग संख्या 148-डी 109.750 कि.मी. राष्ट्रीय राजमार्ग-8 (जिला-राजसमन्द) से 64.200 कि.मी., राष्ट्रीय राजमार्ग-79 गुलाबपुरा (जिला भीलवाड़ा) तक की चौड़ाई एवं सुदृढ़करण से संबंधित [illegible] पर्यावरणीय स्वीकृति से पूर्व आवश्यक लोक सुनवाई हेतु प्रस्ताव राजस्थान राज्य प्रदूषण नियंत्रण मण्डल [illegible] को प्रस्तुत किया गया है।
2. और चूंकि मैसर्स भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना क्रियान्वयन इकाई, ए 11, चन्द्रकिरण, [illegible] कॉलोनी, ब्यावर ने राजस्थान राज्य प्रदूषण नियंत्रण मण्डल को उक्त परियोजना की पर्यावरणीय स्वीकृति से पूर्व आवश्यक लोक सुनवाई हेतु मण्डल को आवेदन प्रस्तुत किया है। उक्त परियोजना हेतु वन एवं पर्यावरण मंत्रालय, भारत सरकार, नई दिल्ली द्वारा जारी अधिसूचना संख्या एस. ओ. 1533 दिनांक 14.09.2006 के अनुसार लोक सुनवाई हेतु इस आशय की सूचना जारी कर 30 दिवस का नोटिस दिया जाना आवश्यक है।
3. उक्त परियोजना से सम्बन्धित EIA/EMP Report एवं [illegible] कार्यालयों में अवलोकनार्थ उपलब्ध है :-

(1) जिला कलेक्टर, राजसमन्द।
(2) जिला उद्योग केन्द्र, राजसमन्द।
(3) जिला परिषद, राजसमन्द।
(4) तहसील कार्यालय, भीम, जिला-राजसमन्द।
(5) कार्यालय पंचायत समिति, भीम, तहसील-भीम, जिला-राजसमन्द।
(6) कार्यालय उपखण्ड मजिस्ट्रेट, भीम, तहसील-भीम, जिला-राजसमन्द।
(7) क्षेत्रीय कार्यालय, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, भीलवाड़ा।
(8) पर्यावरण विभाग, राजस्थान सरकार, शासन सचिवालय, जयपुर।
(9) राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, 4 [illegible] संस्थानिक क्षेत्र, झालाना डूंगरी, जयपुर।
(10) क्षेत्रीय कार्यालय, पर्यावरण एवं वन मंत्रालय, [illegible] केन्द्रीय भवन, सेक्टर एच, अलीगंज, लखनऊ।

अतः सर्व साधारण को नोटिस के माध्यम से एतद् द्वारा सूचित किया जाता है कि वे उक्त परियोजना के पर्यावरणीय स्वीकृति से संबंधित लोक सुनवाई हेतु **दिनांक 02.04.2013 को 1.00 पी.एम. पर कार्यालय उपखण्ड मजिस्ट्रेट, भीम, तहसील-भीम, जिला-राजसमन्द** में उपस्थित होकर अपने लिखित / मौखिक आपत्ति / सुझाव प्रस्तुत कर सकते हैं।

इस संबंध में लिखित आपत्ति / सुझाव इस सूचना के प्रकाशन की तिथि से 30 दिवस के अन्दर क्षेत्रीय कार्यालय, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, भीलवाड़ा को भी दिये जा सकते हैं।

(बी. एस. सांखला) क्षेत्रीय अधिकारी

NORTH EASTERN RAILWAY

Notification No.:-23/2013

IMPORTANT NOTICE FOR THE RAIL PASSENGERS

It is notified for the information of general public that provision of one additional AC-2 Tier coach in train no. 18191/18192 Chhapra-Kanpur Anwarganj Utsarg Express, notified earlier vide this office Notification No. 108/2012 dated 21.12.2012, is being further extended on experimental basis as under:-

Train No. & Name	Station From	Originating Date	Last Date
18191 Chhapra-Kanpur Anwarganj Utsarg Exp	Chhapra	01-03-13	30-06-13
18192 Kanpur Anwarganj-Chhapra Utsarg Exp	Kanpur Anwarganj	02-03-13	01-07-13

CPRO/T-104 Chief Pass Trans., Manager, Gorakhpur

Railway Vigilance Mobile Helpline No. 0551-[illegible] (for Complaints regarding Corruption)

"SERVING CUSTOMERS WITH A SMILE"

Bharat Coking Coal Limited

(A Subsidiary of Coal India Limited)

This is to bring into notice of all concerned that the following 09 (Nine) Clusters of BCCL consisting of 63 Mines and 02 washeries are granted Environmental Clearances by Ministry of Environmental and forests.

Sl. No.	Name of the Cluster	Sanction order number and date
1.	Cluster-I (Damoda Group of 3 Mines - Damoda (Albion Section) OCP, Damoda UGP and Damuda BJ Section OCP) Group of Mines (of 0.9 MTPA normative and 1.17 MTPA (peak) in a combined ML area of 575 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Block Chandrapur, Dist. Dhanbad, Jharkhand	J-11015/93/2009-1A.II (M) dated 6th Feb. 2013
2.	Cluster-II (5 mines of a combined prod. capacity 15.55 MTPA with a peak production of 20.215 MTPA) in a combined ML area of 2025.71 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand.	J-11015/29/2011-1A.II (M) dated 6th Feb. 2013
3.	Cluster-III (7 mines of a peak production of 3.8 MTPA in a combined ML area of 1420.61 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand (EC based on TOR granted on 04.11.2010)	J-11015/213/2010-1A.II (M) dated 6th Feb. 2013
4.	Cluster-IV (6 mines with production capacity 2.851 MTPA (Normative) 3.706 MTPA (Peak) in a combined ML area of 1123.79 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand excluding Gaslitand Colliery UG	J-11015/212/2010-1A.II (M) dated 6th Feb. 2013
5.	Cluster-V (7 mines of a 4.854 (Normative) and 6.311 (Peak) production of MTPA in a combined ML area of 1957.06 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand (EC based on TOR granted on 16.03.2011)	J-11015/01/2011-1A.II (M) dated 11th Feb. 2013
6.	Cluster-VII (combined capacity 6.227 MTPA with a peak prodn. of 8.16 MTPA in a combined ML area of 2127.7 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand (EC based on TOR granted on 09.12.2010) (excluding Kustore UG and East Bhuggatdih)	J-11015/238/2010-1A.II (M) dated 6th Feb. 2013
7.	Cluster-X (5 mines of 1.762 MTPA of normative and peak production of 2.289 MTPA in a combined ML area of 2057.95 ha) and Sudamdih Coal Washery (Within the lease hold of Sudamdih Shaft Mine) of 1.6 MTPA of normative and 2.08 MTPA peak production for a area of 18 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand (EC based on TOR granted on 09.02.2011).	J-11015/388/2010-1A.II (M) dated 6th Feb. 2013
8.	Cluster-XVI - Coalmines (Dahibari-Basantimata OCP, Basantimata under Ground Mine, New Laikdih OCP (including Dahibari Coal Washery), Laikdih Deep UG, Chanch UG) (normative 1.51 MTPA and 1.963 MTPA peak in a combined ML area of 1964.21 ha) and Dahibari washery of 1.6 MTPA in the area of 12 ha of M/s Bharat Coking Coal Ltd., in Dist. Dhanbad, Jharkhand (EC based on TOR granted on 28.05.2010).	J-11015/185/2010-1A.II (M) dated 6th Feb. 2013
9.	Cluster-VIII Group of 10 Mines (combined capacity 4.31 MTPA with a peak prodn. of 5.603 MTPA in a combined ML area of 1183.92 ha (1200.41 ha-16.49 ha=1183.92 ha) of M/s Bharat Coking Coal Ltd., located in Jharia Coalfields, Dist. Dhanbad, Jharkhand.	J-11015/298/2010-1A.II (M) dated 10th Feb. 2013

The copy of the clearance letter is available with the Jharkhand State Pollution Control Board and may also be seen at the website of the Ministry of Environmental and forests at http://envfor.nic.in and on the official website of BCCL at http://www.bccl.gov.in

ENVIRONMENTAL MONITORING REPORT OF BHARAT COKING COAL LIMITED, CLUSTER – III

(FOR THE Q.E. JUNE, 2016)

E. C. no. J-11015/213/2010-IA.II (M) dated 06.02.2013.

September, 2016

CMPDI
ISO 9001 Company
Regional Institute-II
Dhanbad, Jharkhand

CLUSTER - III

(FOR THE Q.E. JUNE, 2016)

CONTENTS

STRICTLY RESTRICTED
FOR COMPANY USE ONLY RESTRICTED

The information given in this report is not to be communicated either directly or indirectly to the press or to any person not holding an official position in the CIL / GOVERNMENT.

ENVIRONMENTAL MONITORING REPORT OF BHARAT COKING COAL LIMITED CLUSTER – III

(FOR THE Q.E. JUNE, 2016)

E. C. no. J-11015/213/2010-IA.II (M) dated 06.02.2013

September, 2016

CMPDI

ISO 9001 Company

Regional Institute-II

Dhanbad, Jharkhand

EXECUTIVE SUMMARY

1.0 Introduction

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

Bharat Coking Coal Limited (BCCL), a Subsidiary company of Coal India Limited is operating Underground and Opencast Mines in Jharia Coalfield (JCF) is a part of Gondwana Coalfields located in Dhanbad district of Jharkhand, the JCF is bounded by $23^0$37' N to $23^0$52' N latitudes and $86^0$09' E to $86^0$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_{10}), Fine Particulate Matter ($PM_{2.5}$), Sulphur Di-oxide (SO_2) and Nitrogen Oxides (NO_X). Respirable Dust Samplers (RDS) and Fine Dust Sampler (PM2.5 sampler) were used for sampling of $PM_{10,}$ SO_2, & NO_X and Fine Dust Sampler (PM2.5 sampler) were used for

sampling of $PM_{2.5}$ 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 27 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_{EQ}' 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 $PM_{10,}$ $PM_{2.5}$, SO_2 and NO_X 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_{10} & $PM_{2.5}$ 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 with in 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.

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 III is in the westernmost part of the Jharia coalfield. It includes Jogidih Colliery, Maheshpur Colliery, South Govindpur Colliery, Teturiya Colliery, Govindpur Colliery, New Akasshkinaree Mine and Block IV Kooridih Mixed Mine. The cluster – III is situated about 40 - 45 kms from Dhanbad Railway Station. The mines of this cluster - III 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 and Bagdighi Nala.

1.2 The Project has Environmental Clearance from Ministry of Environment, Forest and Climate Change (MoEF&CC) for a rated capacity of 2.769 MTPA (normative) and 3.6 MTPA peak capacity of coal production vide letter no **E. C. no. J-11015/213/2010-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_{10}, $PM_{2.5}$, SO_2, NOx 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.

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

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 IV Kooridih OCP (A6): Industrial Area

The location of the sampling station is 23^0 47.916' N 86^0 15.333' E. The sampler was placed at 1.5 m above the ground level near Safety office of Block IV OCP. The station was selected to represent the impact of mining activities of Block IV, poor roads condition, heavy public traffic, burning of coal by the surrounding habitants.

II. BUFFER ZONE Monitoring Location

i) Muraidiah OCP (A5): Industrial Area

The sampler was placed at a height of 1.5 m from the ground level at Shatabdi Colliery.

ii) Govindpur Village/Ramkanali (A7): **Industrial Area**

The location of the sampling station is 23^0 48'34" N 86^0 18'22" E. The sampler was placed at a height of 1.5 m above the ground level at AARC agent Office, Ramkanali.

iii) Kharkharee CISF Office (A21): **Industrial Area**

The sampler was placed at a height of 1.5 m above the ground level at Kharkharee Colliery.

2.2 Methodology of sampling and analysis

Parameters chosen for assessment of ambient air quality were Particulate Matter (PM_{10}), Particulate Matter ($PM_{2.5}$), Sulphur Di-oxide (SO_2) and Nitrogen Oxides (NO_X). Respirable Dust Samplers (RDS) & fine particulates sampler were used for sampling PM_{10} & $PM_{2.5}$ 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_{10}

In **core zone** under **Industrial area** varies from 68 to 84 μ/m^3.
In **buffer zone** in **Industrial area** varies from 58 to 88 μ/m^3

Particulate Matter $PM_{2.5}$

In **core zone** under **Industrial area** varies from 29 to 43 μ/m^3.
In **buffer zone** in **Industrial area** varies from 28 to 42 μ/m^3

Sulphur Dioxide:

In **core zone** under **Industrial area** varies from 10 to 12 μ/m^3.
In **buffer zone** in **Industrial area** varies from 10 to 12 μ/m^3

Oxides of Nitrogen:

In **core zone** under **Industrial area** varies from 20 to 28 μ/m^3.
In **buffer zone** in **Industrial area** varies from 20 to 29 μ/m^3.

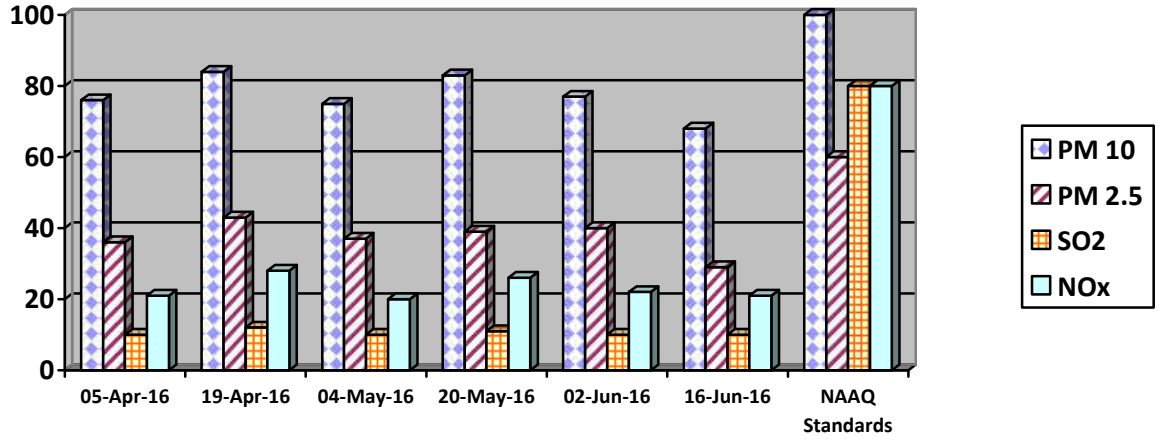
AMBIENT AIR QUALITY DATA

Name of the Company: **Bharat Coking Coal limited** Year : **2015-16.**
Name of the Cluster : **Cluster – III** Q.E.: **June' 2016**

Station Code/Name: (a) A6 Block IV Kooridih OCP Category: Industrial.
ZONE: CORE

(a). Station Code/Name: A6 Block IV Kooridih OCP Category: Industrial[1].

Sl. No.	Dates of sampling	PM 10	PM 2.5	SO_2	NO_x
1	05 - Apr -16	76	36	<10.0	21
2	19 - Apr - 16	84	43	12	28
3	04 - May -16	75	37	<10.0	20
4	20 - May - 16	83	39	11	26
5	02 - Jun - 16	77	40	<10.0	22
6	16 - Jun - 16	68	29	<10.0	21
NAAQ Standards		100	60	80	80



Note:

- *All values are expressed in microgram per cubic meter.*

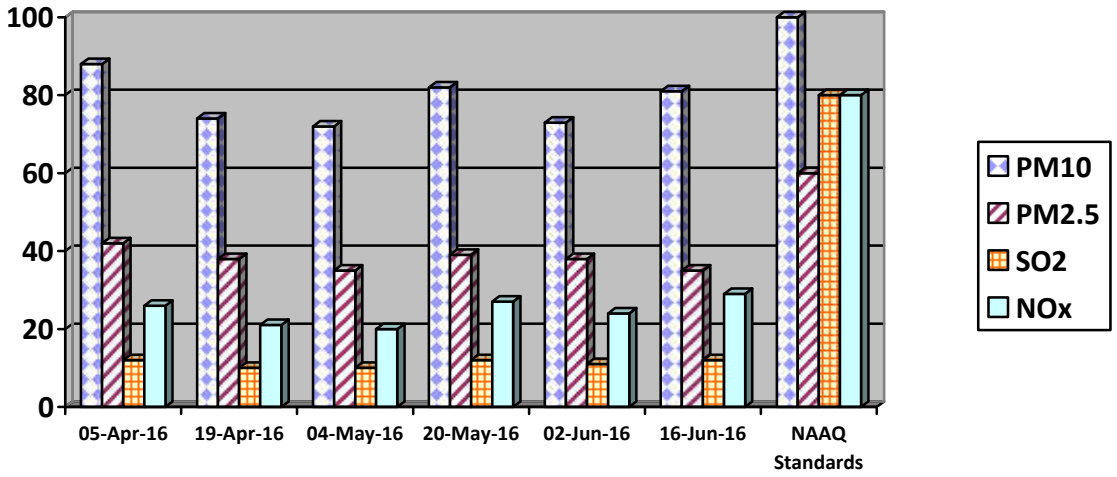
[1] Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed……  …….Dated 19.07.2016. Job No. 110310

AMBIENT AIR QUALITY DATA

Name of the Company: **Bharat Coking Coal limited** Year : **2015-16.**
Name of the Cluster : **Cluster – III** Q.E.: **June' 2016**
Station Code/Name: (a) A5 – Muraidih OCP **Category:**
(b) A7- Govindpur, Ramkanali **Industrial.**
(c) A21- KharKharee CISF Office
ZONE: BUFFER

(a) Station Code/Name: A5 – Muraidih OCP, Category: Industrial[2].

Sl. No.	Date	PM_{10}	$PM_{2.5}$	SO_2	NOx
1	05 - Apr -16	88	42	12	26
2	19 - Apr - 16	74	38	<10.0	21
3	04 - May -16	72	35	<10.0	20
4	20 - May - 16	82	39	12	27
5	02 - Jun - 16	73	38	11	24
6	16 - Jun - 16	81	35	12	29
	NAAQ Standards	100	60	80	80



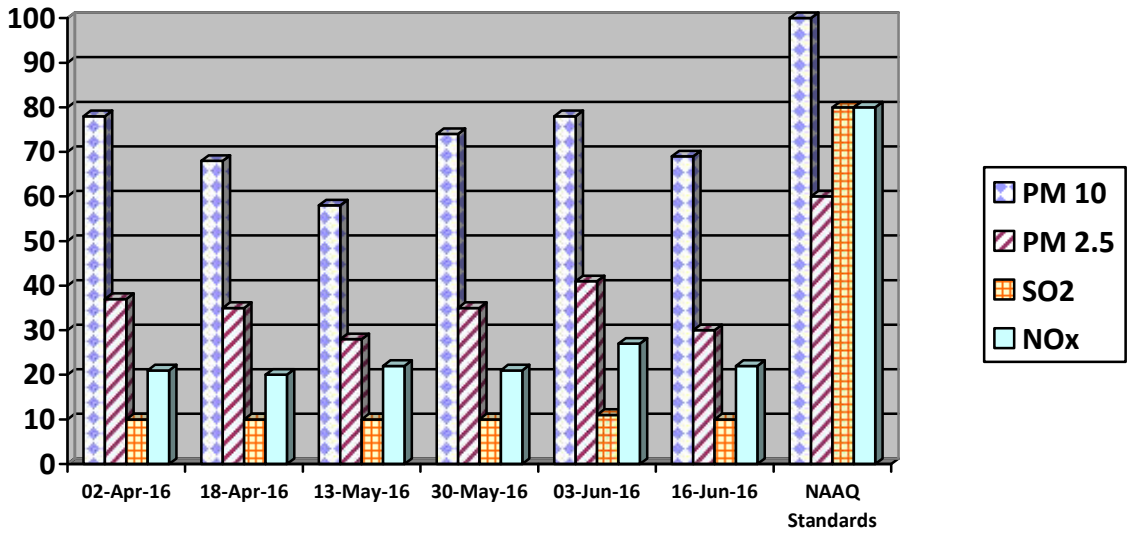
Note:

- *All values are expressed in microgram per cubic meter.*

[2] Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed……  …….Dated 19.07.2016. Job No. 110310

(b). Station Code/Name: A7 – Govindpur, Ramkanali, Category: Industrial[3].

Sl. No.	Dates of sampling	PM 10	PM 2.5	SO2	NOx
1	02 - Apr -16	78	37	<10.0	21
2	18 - Apr - 16	68	35	<10.0	20
3	13 - May -16	58	28	<10.0	22
4	30 - May - 16	74	35	<10.0	21
5	03 - Jun - 16	78	41	11	27
6	16 - Jun - 16	69	30	<10.0	22
	NAAQ Standards	100	60	80	80



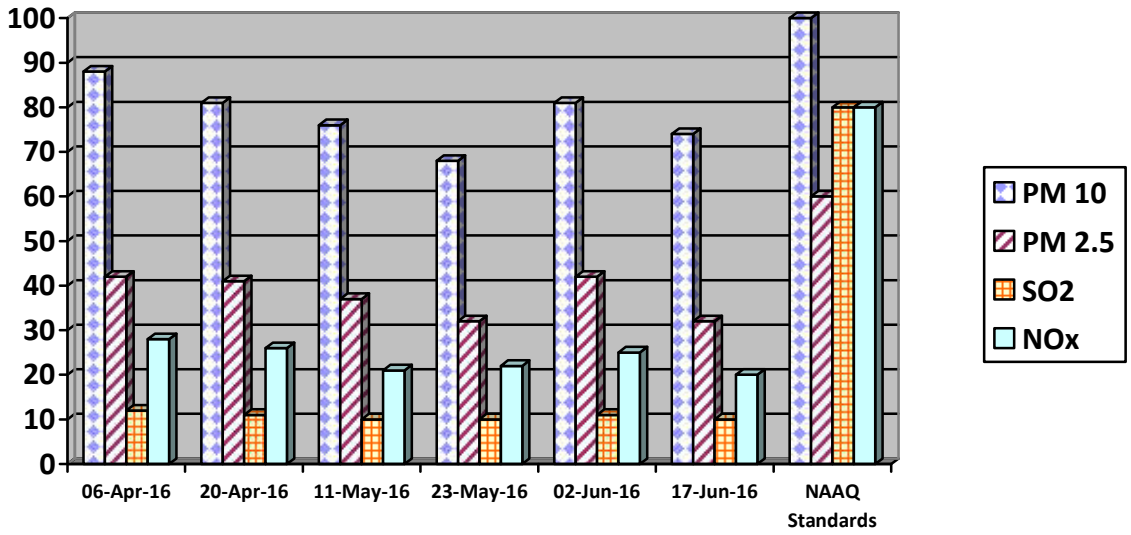
Note:

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

[3] Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed……  …….Dated 19.07.2016. Job No. 110310

(c). Station Code/Name: A21 – KharKharee CISF Office, Category: Industrial[4].

Sl. No.	Dates of sampling	PM 10	PM 2.5	SO2	NOx
1	06 - Apr -16	88	42	12	28
2	20 - Apr - 16	81	41	11	26
3	11 - May -16	76	37	<10.0	21
4	23 - May - 16	68	32	<10.0	22
5	02 - Jun - 16	81	42	11	25
6	17 - Jun - 16	74	32	10	20
	NAAQ Standards	100	60	80	80

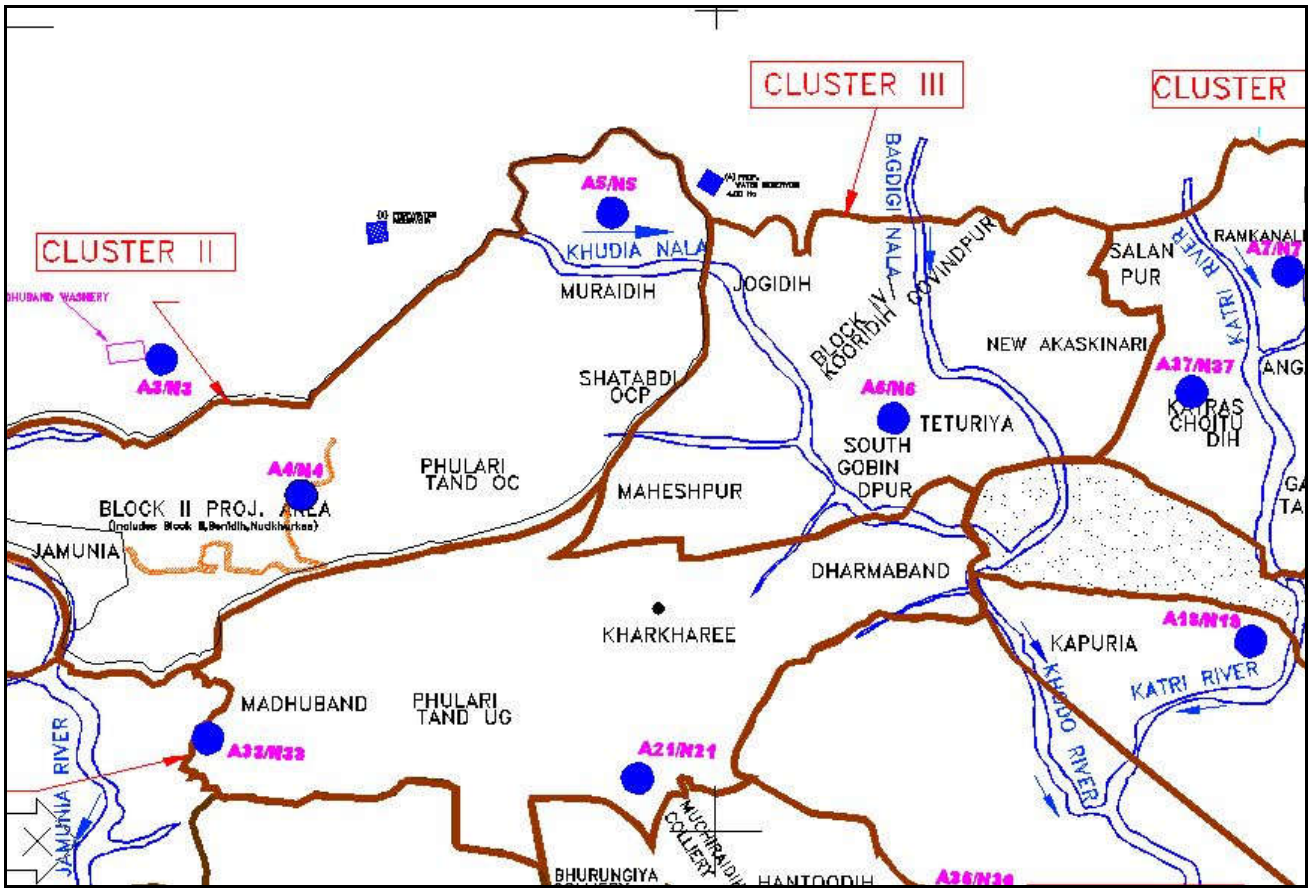


Note:

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

[4] Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed……  …….Dated 19.07.2016. Job No. 110310

Plate No. I: Ambient Air Monitoring Stations in Cluster- III 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
III Coal mines located in the coal fields of • Jharia • Raniganj • Bokaro	Suspended Particulate Matter (SPM)	Annual Average * 24 hours **	500 µg/m^3 700 µg/m^3	- High Volume Sampling (Average flow rate not less than 1.1 m^3/minute)
	Respirable Particulate Matter (size less than 10 µm) (RPM)	Annual Average * 24 hours **	250 µg/m^3 300 µg/m^3	Respirable Particulate Matter sampling and analysis
	Sulphur Dioxide (SO_2)	Annual Average * 24 hours **	80 µg/m^3 120 µg/m^3	1.Improved west and Gaeke method 2.Ultraviolet fluorescene
	Oxide of Nitrogen as NO_2	Annual Average * 24 hours **	80 µg/m^3 120 µg/m^3	1. Jacob & Hochheiser Modified (Na-Arsenic) Method 2. Gas phase Chemilumine-scence

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 18th 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 11th April 1994 and S.O.935(E), dated 14th 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)	
Sulphur Dioxide (SO_2), µg/m³	Annual * 24 Hours **	50 80	20 80	-Improved West and Gaeke Method -Ultraviolet Fluorescence
Nitrogendioxide (NO_2), µg/m³	Annual * 24 Hours **	40 80	30 80	-Jacob &Hochheiser modified ($NaOH$-$NaAsO_2$) Method -Gas Phase Chemiluminescence
Particulate Matter (Size less than 10µm) or PM_{10}, µg/m³	Annual * 24 Hours **	60 100	60 100	-Gravimetric -TEOM -Beta attenuation
Particulate Matter (Size less than 2.5µm) or $PM_{2.5}$, µg/m³	Annual * 24 Hours **	40 60	40 60	-Gravimetric -TEOM -Beta attenuation
Ozone (O_3) , µg/m³	8 Hours * 1 Hour **	100 180	100 180	-UV Photometric -Chemiluminescence -Chemical Method
Lead (Pb) , µg/m³	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
Carbon Monoxide (CO), mg/m³	8 Hours ** 1 Hour **	02 04	02 04	-Non dispersive Infrared (NDIR) Spectroscopy
Ammonia (NH_3), µg/m³	Annual * 24 Hours **	100 400	100 400	-Chemiluminescence -Indophenol blue method
Benzene (C_6H_6), µg/m³	Annual *	05	05	-Gas Chromatography (GC) based continuous analyzer -Adsorption and desorption followed by GC analysis
Benzo(a)Pyrene (BaP) Particulate phase only, ng/m³	Annual *	01	01	-Solvent extraction followed byHPLC/GC analysis
Arsenic (As), ng/m³	Annual *	06	06	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper
Nickel (Ni), ng/m³	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.

CHAPTER – III

WATER QUALITY MONITORING

3.1 Location of sampling sites

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

i) **Mine Discharge of Govindpur Colliery (MW3)**
A sampling point is fixed to assess the effluent quality of Mine discharge. This location is selected to monitor effluent discharge in to Jamunia river.

ii) Drinking Water quality at **Jogidih Village (DW3)**

iii) Surface water quality at **U/S of Khudia nalla (SW4)**

iv) Surface water quality at **D/S of Khudia nalla (SW5)**

v) Surface water quality at **U/S of Bagdigih nalla (SW6)**

vi) Surface water quality at **D/S of Bagdigih nalla (SW6)**

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 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 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 parmeters are within the permissible limits.

WATER QUALITY DATA

(Effluent Water Four Parameters*)*

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

Year : **2015-16.**

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

Month: **April, 2016.**

Name of the Stations & Code : **Mine Discharge of Govindpur Colliery (MW3)**

a. First Fortnight

Sl. No.	Parameters	MW3 (Mine Discharge) 05.04.2016	As per MOEF General Standards for schedule VI
1	Total Suspended Solids	32	*100 (Max)*
2	pH	8.14	*5.5 - 9.0*
3	Oil & Grease	<2.0	*10 (Max)*
4	COD	24	*250 (Max)*

b. Second Fortnight

Sl. No.	Parameters	MW3 (Mine Discharge) 16.04.2016	As per MOEF General Standards for schedule VI
1	Total Suspended Solids	32	*100 (Max)*
2	pH	8.10	*5.5 - 9.0*
3	Oil & Grease	<2.0	*10 (Max)*
4	COD	28	*250 (Max)*

All values are expressed in mg/lit unless specified.

Analysed By

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

WATER QUALITY DATA

(Effluent Water Four Parameters*)*

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

Year : **2015-16.**

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

Month: **May, 2016.**

Name of the Stations & Code : **Mine Discharge of Govindpur Colliery (MW3)**

a. First Fortnight

Sl. No.	Parameters	MW3 (Mine Discharge) 02.05.2016	As per MOEF General Standards for schedule VI
1	Total Suspended Solids	32	*100 (Max)*
2	pH	8.22	*5.5 - 9.0*
3	Oil & Grease	<2.0	*10 (Max)*
4	COD	24	*250 (Max)*

b. Second Fortnight

Sl. No.	Parameters	MW3 (Mine Discharge) 25.05.2016	As per MOEF General Standards for schedule VI
1	Total Suspended Solids	36	*100 (Max)*
2	pH	7.90	*5.5 - 9.0*
3	Oil & Grease	<2.0	*10 (Max)*
4	COD	28	*250 (Max)*

All values are expressed in mg/lit unless specified.

Analysed By

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

WATER QUALITY DATA

(Effluent Water Four Parameters*)*

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

Year : **2015-16.**

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

Month: **June, 2016.**

Name of the Stations & Code : **Mine Discharge of Govindpur Colliery (MW3)**

a. First Fortnight

Sl. No.	Parameters	MW3 (Mine Discharge) 14.06.2016	As per MOEF General Standards for schedule VI
1	Total Suspended Solids	36	*100 (Max)*
2	pH	7.97	*5.5 - 9.0*
3	Oil & Grease	<2.0	*10 (Max)*
4	COD	24	*250 (Max)*

b. Second Fortnight

Sl. No.	Parameters	MW3 (Mine Discharge) 18.06.2016	As per MOEF General Standards for schedule VI
1	Total Suspended Solids	38	*100 (Max)*
2	pH	8.09	*5.5 - 9.0*
3	Oil & Grease	<2.0	*10 (Max)*
4	COD	24	*250 (Max)*

All values are expressed in mg/lit unless specified.

1
2
Analysed By

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

WATER QUALITY

(SUFACE WATER- ALL PARAMETERS)

Name of the Company: **Bharat Coking Coal Limited** Year : **2015-16.**

Name of the Cluster : **Cluster - III** Month: **Q. E. June, 2016.**

Area : **Govindpur Colliery** **Project: Govindpur Colliery** **Cluster III**

Stations:

1. Upstream in Khudia nala SW-4 — **Date of Sampling:** 30/05/2016
2. Downstream in Khudia nala SW-5 — 30/05/2016
3. Upstream in Bagdigi Nala SW-6 — 03/05/2016
4. Downstream in Bagdigi Nala SW-7 — 01/06/2016

Sl. No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		SW-4	SW-5	SW-6	SW-7		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2.60	2.8	2.4	2.6	2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Colour (Hazen Unit)	colourless	colourless	colourless	yellowish	Qualitative	Physical/Qualitative
4	Chlorides (as Cl), mg/l, Max	66	74	80	98	2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03	<0.03	<0.03	0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Disolved Oxygen, min.	7.2	6.8	6.2	5.8	0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	1.13	1.24	0.89	1.08	0.02	APHA, 22nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 22nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.06	<0.06	<0.06	<0.06	0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	APHA, 22nd Edition AAS-GTA
11	Nitrate (as NO_3), mg/l, Max	8.42	9.30	3.99	7.53	0.50	APHA, 22nd Edition, UV-Spectrphotometric
12	pH value	8.32	8.18	7.34	7.81	2.5	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	APHA, 22nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	APHA, 22nd Edition AAS-GTA
15	Sulphate (as SO_4) mg/l, Max	290	320	240	290	2.00	APHA, 22nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	742	824	696	748	25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Zinc (as Zn), mg/l, Max	0.04	0.01	0.03	0.06	0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

1
2
Analysed By

26/7/16
Dy.Technical Manager
Env. Lab, CMPDI(HQ)
(Authorized Signatory)

WATER QUALITY

(DRINKING WATER- ALL PARAMETERS)

Name of the Company: **Bharat Coking Coal Limited** Year : **2015-16.**

Name of the Cluster : **Cluster - III** Month: **Q. E. JUNE, 2016.**

Area : **Govindpur Colliery** **Project: Govindpur Colliery** **Cluster III**

Stations: 1. Drinking Water from Jogidih Village DW-3 **Date of Sampling:** 25/05/2016

Sl. No	Parameter	Sampling Stations			Detection Limit	IS:10500 Drinking Water Standards	Standard / Test Method
		DW-3	2	3			
1	Boron (as B), mg/l, Max	<0.20			0.20	0.5	APHA, 22nd Edition ,Carmine
2	Colour,in Hazen Units	4			1	5	APHA, 22nd 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	38			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	1.43			0.02	1.0	APHA, 22nd Edition , SPADNS
7	Free Residual Chlorine, mg/l, Min	0.02			0.02	0.2	APHA, 22nd Edition, DPD
8	Iron (as Fe), mg/l, Max	<0.06			0.06	0.3	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
9	Lead (as Pb), mg/l, Max	<0.005			0.005	0.01	APHA, 22nd 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_3), mg/l, Max	3			0.5	45	APHA, 22nd Edition, UV-Spectrphotometric
12	Odour	Agreeable			Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
13	pH value	8.09			2.5	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric
14	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001			0.001	0.001	APHA, 22nd Edition,4-Amino Autipyrine
15	Selenium (as Se), mg/l, Max	<0.002			0.002	0.01	APHA, 22nd Edition, AAS-GTA
16	Sulphate (as SO_4) mg/l, Max	45			2.00	200	APHA, 22nd Edition. Turbidity
17	Taste	Acceptable			Qualitative	Acceptable	APHA, 22nd Edition. Taste
18	Total Alkalinity (c_aco_3),, mg/l, Max	120			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	<0.04			0.06	0.05	IS-3025/52:2003, AAS-Flame
21	Total Dissolved Solids, mg/l, Max	280			25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (c_aco_3), mg/l, Max	188			4.00	200	IS-3025/21:1983, R-2002, EDTA
23	Turbidity, NTU, Max	8			1.0	1	IS-3025/10:1984 R-1996, Nephelometric
24	Zinc (as Zn), mg/l, Max	0.02			0.01	5.0	IS 3025/ 49 : 1994, R : 2009, AAS-Flame

1 2/5/16
2 26/5/16
Analysed By

26/5/16
Dy.Technical Manager
Env. Lab, CMPDI(HQ)
(Authorized Signatory)

WATER QUALITY

(GROUND WATER- ALL PARAMETERS)

Name of the Company: **Bharat Coking Coal Limited** Year : **2015-16.**

Name of the Cluster: **Cluster - III** Month: **Q. E. JUNE, 2016.**

Area : **Govindpur Colliery** **Project: Govindpur Colliery** **Cluster III**

Stations: **Date of Sampling:**

1. Drinking Water from Govindpur, Ambagan Village GW-3 20/05/2016

Sl. No	Parameter	Sampling Stations			Detection Limit	IS:10500 Drinking Water Standards	Standard / Test Method
		GW-3	2	3			
1	Boron (as B), mg/l, Max	<0.20			0.20	0.5	APHA, 22nd Edition ,Carmine
2	Colour,in Hazen Units	6			1	5	APHA, 22nd Edition ,Pt.-Co. Method
3	Calcium (as Ca), mg/l, Max	96			1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	60			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	0.72			0.02	1.0	APHA, 22nd Edition , SPADNS
7	Free Residual Chlorine, mg/l, Min	0.04			0.02	0.2	APHA, 22nd Edition, DPD
8	Iron (as Fe), mg/l, Max	<0.06			0.06	0.3	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
9	Lead (as Pb), mg/l, Max	<0.005			0.005	0.01	APHA, 22nd 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_3), mg/l, Max	4			0.5	45	APHA, 22nd Edition, UV-Spectrphotometric
12	Odour	Agreeable			Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
13	pH value	7.81			0.2	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric
14	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001			0.001	0.001	APHA, 22nd Edition,4-Amino Autipyrine
15	Selenium (as Se), mg/l, Max	<0.002			0.002	0.01	APHA, 22nd Edition, AAS-GTA
16	Sulphate (as SO_4) mg/l, Max	98			2.00	200	APHA, 22nd Edition. Turbidity
17	Taste	Acceptable			Qualitative	Acceptable	APHA, 22nd Edition. Taste
18	Total Alkalinity (c_aco_3),, mg/l, Max	360			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	<0.04			0.04	0.05	IS-3025/52:2003, AAS-Flame
21	Total Dissolved Solids, mg/l, Max	890			25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (c_aco_3), mg/l, Max	488			4.00	200	IS-3025/21:1983, R-2002, EDTA
23	Turbidity, NTU, Max	15			1.0	1	IS-3025/10:1984 R-1996, Nephelometric
24	Zinc (as Zn), mg/l, Max	0.03			0.01	5.0	IS 3025/ 49 : 1994, R : 2009, AAS-Flame

1
2
Analysed By

26/7/16
Dy.Technical Manager
Env. Lab, CMPDI(HQ)
(Authorized Signatory)

CHAPTER - IV

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites and their rationale

I. **Block –IV (N6)**

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

II. **Muraidiah OCP (N5)**

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

III. Govindpur Village (N7)

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. **Kharkharee (N21)**

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_{EQ}' 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 and night time and the observed values were compared with standards prescribed by MoEFCC.

The results of Noise levels recorded during day and night time on fortnightly basis are presented in tabular form along with the applicable standard permissible limits. The observed values in terms of L_{EQ} 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 : **2015-16.**

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

Month: **April, 2016.**

Name of the Stations & Code :

1. **Block –IV(N6)**
2. **Muraidiah OCP (N5)**
3. **Govindpur Village(N7)**
4. **Kharkharee(N21)**[1]

(a) First Fortnight

Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	**Permissible Limit of Noise level in dB(A)*
1	Block –IV(N6)	Industrial area	04.04.2016	61.3	*75*
2	Muraidiah OCP (N5)	Industrial area	05.04.2016	62.7	*75*
3	Govindpur Village(N7)	Industrial area	02.04.2016	58.7	*75*
4	Kharkharee(N21)	Industrial area	06.04.2016	56.7	*75*

(b) Second Fortnight

Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	**Permissible Limit of Noise level in dB(A)*
1	Block –IV(N6)	Industrial area	19.04.2016	62.6	*75*
2	Muraidiah OCP (N5)	Industrial area	21.04.2016	57.8	*75*
3	Govindpur Village(N7)	Industrial area	18.04.2016	56.4	*75*
4	Kharkharee(N21)	Industrial area	20.04.2016	58.2	*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.**

[1] Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed……  …….Dated 19.07.2016. Job No. 110310

NOISE LEVEL DATA

Name of the Company: **Bharat Coking Coal Limited** Year : **2015-16.**

Name of the Project : **Cluster -III** Month: **May, 2016**

Name of the Stations & Code :

1. **Block II OCP (N4)**
2. **Muraidiah OCP (N5)**
3. **Madhuband Washery (N3)**
4. **Madhuband UGP (N33)**[2]

a. First Fortnight

Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	**Permissible Limit of Noise level in dB(A)*
1	Block –IV(N6)	Industrial area	04.05.2016	54.7	*75*
2	Muraidiah OCP (N5)	Industrial area	07.05.2016	61.3	*75*
3	Govindpur Village(N7)	Industrial area	13.05.2016	60.8	*75*
4	Kharkharee(N21)	Industrial area	11.05.2016	57.8	*75*

b. Second Fortnight

Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	**Permissible Limit of Noise level in dB(A)*
1	Block –IV(N6)	Industrial area	20.05.2016	63.4	*75*
2	Muraidiah OCP (N5)	Industrial area	23.05.2016	59.7	*75*
3	Govindpur Village(N7)	Industrial area	30.05.2016	62.7	*75*
4	Kharkharee(N21)	Industrial area	23.05.2016	56.2	*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.**

[2] Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed……  …….Dated 19.07.2016. Job No. 110310

NOISE LEVEL DATA

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

Year : **2015-16.**

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

Month: **June, 2016**

Name of the Stations & Code :

1. **Block II OCP (N4)**
2. **Muraidiah OCP (N5)**
3. **Madhuband Washery (N3)**
4. **Madhuband UGP (N33)**[3]

a. First Fortnight data

Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	**Permissible Limit of Noise level in dB(A)*
1	**Block –IV(N6)**	**Industrial area**	02.06.2016	58.2	*75*
2	**Muraidiah OCP (N5)**	**Industrial area**	06.06.2016	56.4	*75*
3	**Govindpur Village(N7)**	**Industrial area**	03.06.2016	54.6	*75*
4	**Kharkharee(N21)**	**Industrial area**	02.06.2016	58.3	*75*

b. Second Fortnight data

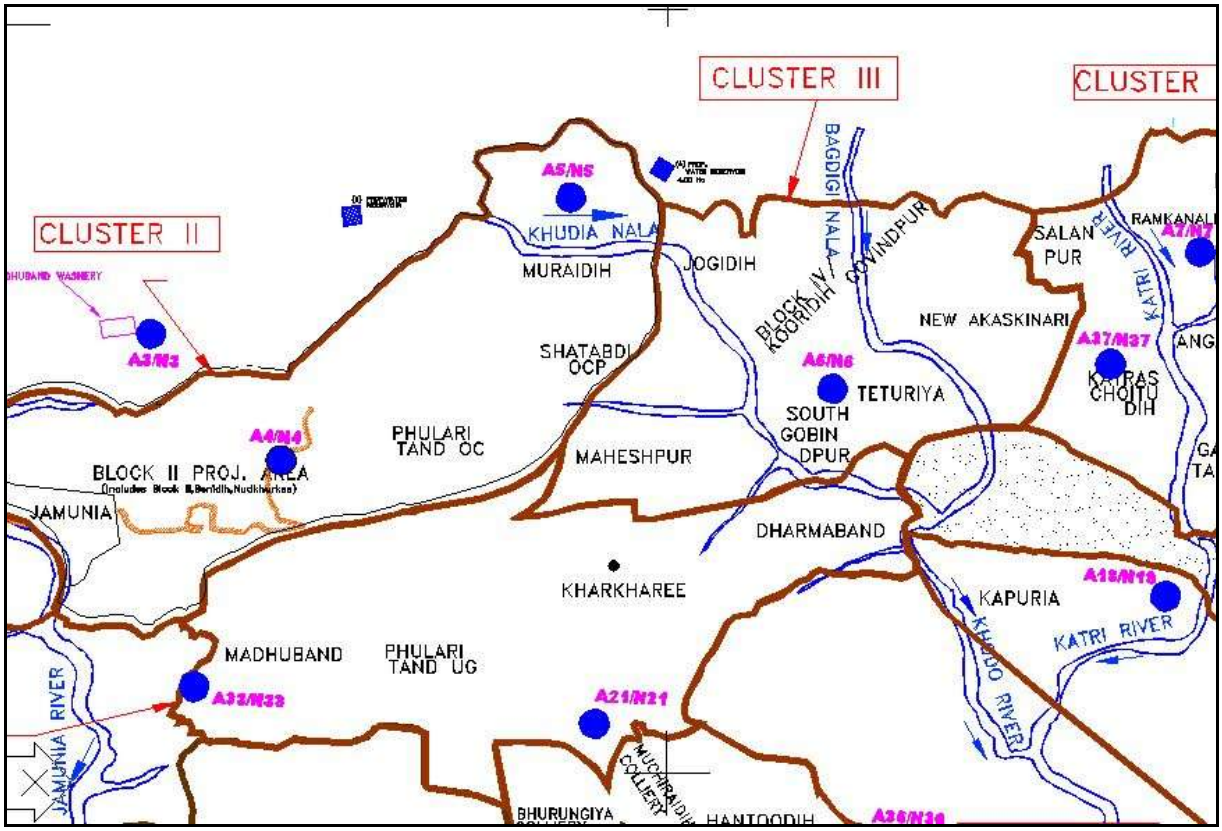
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	**Permissible Limit of Noise level in dB(A)*
1	**Block –IV(N6)**	**Industrial area**	16.06.2016	54.6	*75*
2	**Muraidiah OCP (N5)**	**Industrial area**	21.06.2016	60.6	*75*
3	**Govindpur Village(N7)**	**Industrial area**	16.06.2016	58.3	*75*
4	**Kharkharee(N21)**	**Industrial area**	17.06.2016	61.3	*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.***

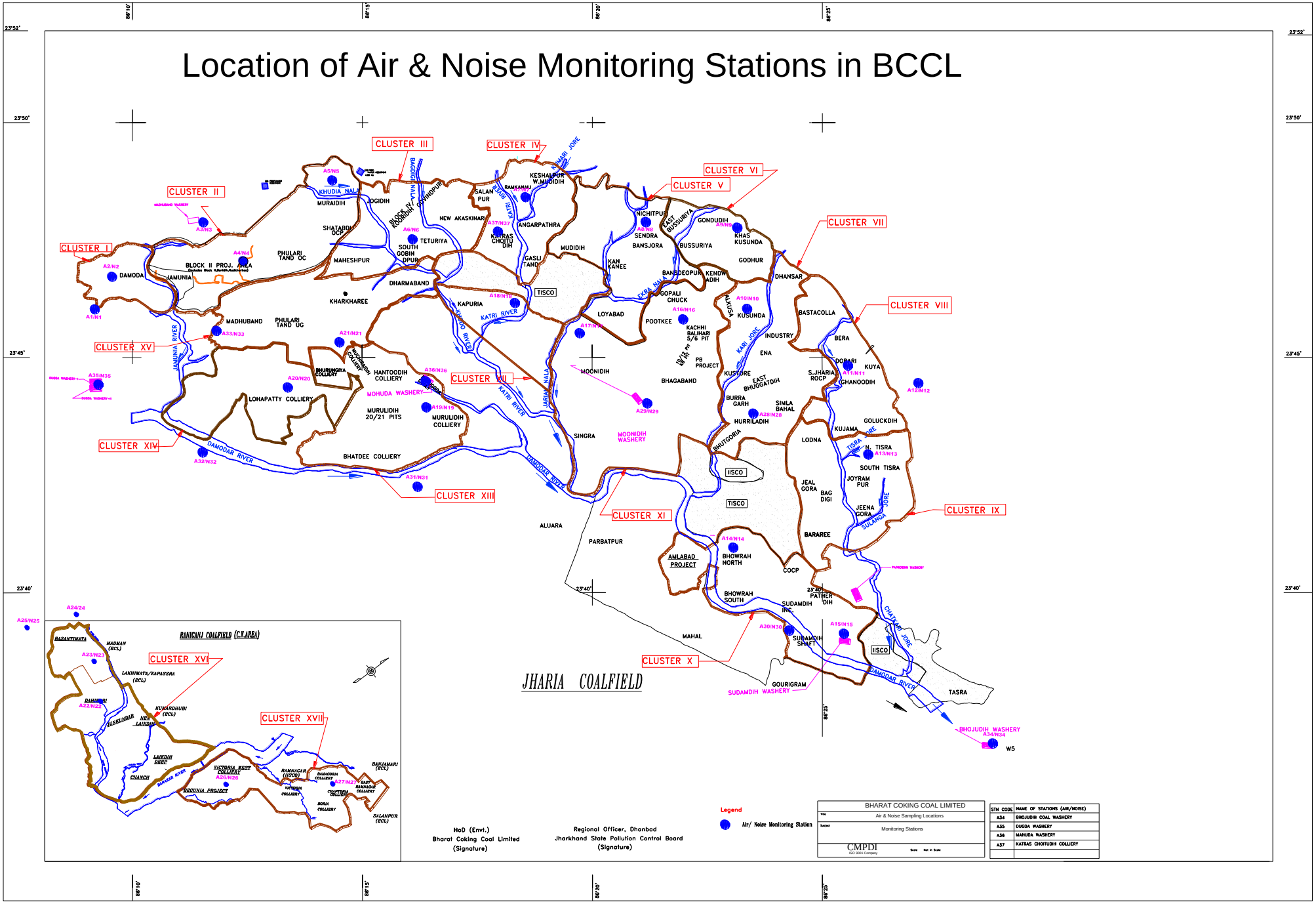
*** Day Time: 6.00 AM to 10.00 PM, +Night Time: 10.00 PM to 6.00 AM.**

[3] Report released by Shri Indranil De, Manager (Env), CMPDI, RI-1, Asansol, Signed……  …….Dated 19.07.2016. Job No. 110310

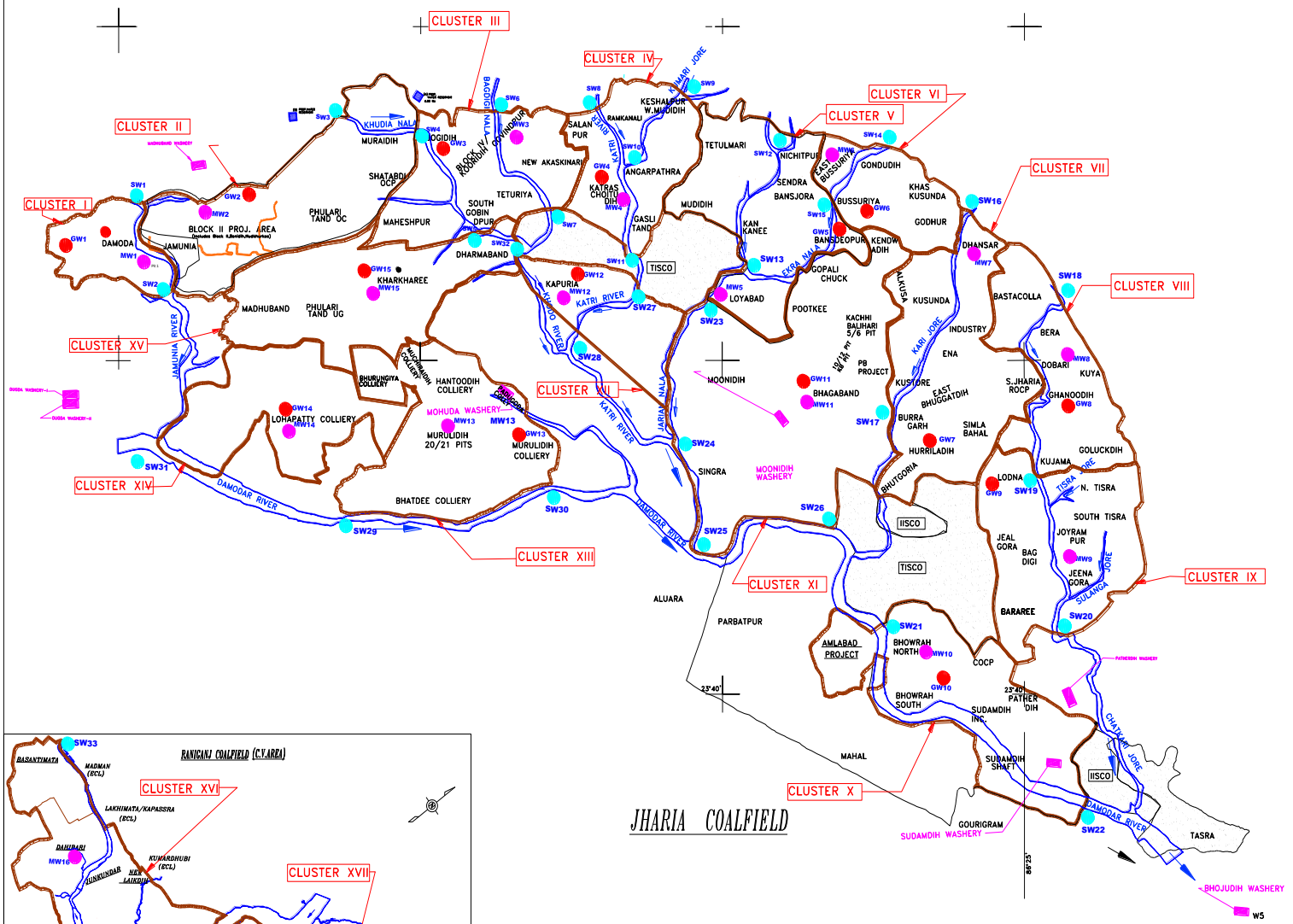
Noise Level Monitoring Location of Cluster III



Location of Air & Noise Monitoring Stations in BCCL



Water Sampling Locations in BCCL



INDEX

Cluster	Suface 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	GW1	Ghutway Village
II	SW3, SW4	Khudia Nala	MW2	Block II OCP	GW2	Joyrampur Village
III	SW4, SW5, SW6, SW7	Khudia Nala, Bagdigi Nala	MW3	Govindpur Colliery	GW3	Jogidih Village
IV	SW8, SW11, SW9, SW10	Katri River, Kumari Jore	MW4	Chotudih	GW4	Kankanee Village
V	SW12, SW13, SW15	Jarian Nala, Ekra Nala	MW5	Mudidih	GW5	Nichitpur
VI	SW14, SW15	Ekra Nala	MW6	East Bassuria UGP	GW6	Bansjora Borewell
VII	SW16, SW17	Kari Jore	MW7	Dhansar UGP	GW7	Hurriladih
VIII	SW18, SW19	Kashi Jore	MW8	Dobari UGP	GW8	Ghanudih
IX	SW19, SW20	Kashi Jore	MW9	Jeenagora	GW9	Lodna
X	SW21, SW22	Damodar River	MW10	Bhowrah North	GW10	Bhowrah South
XI	SW23, SW24, SW25, SW26	Jarian Nala, Damodar River	MW11	Bhagaband h UGP	GW11	Bhagabandh
XII	SW27, SW28	Katri River	MW12	Kapuria	GW12	Kapuria
XIII	SW29, SW30	Damodar River	MW13	Murulidih (20/21)	GW13	Murilidih
XIV	SW31, SW29	Damodar River	MW14	Lohapatti	GW14	Lohapatti
XV	SW5, SW32	Khudia Nala	MW15	Kharkharee UGP	GW15	Kharkharee
XVI	SW33, SW34	Khudia River	MW16	Dahibari OCP	GW16	Patlabari Village
XVII	SW35, SW36	Barakar River	MW17	Damagoria Colliery	GW17	Chaptoria