



भारत कोकिंग कोल लिमिटेड
(एक मिनिस्ट्रल कम्पनी)
(कोल इण्डिया लिमिटेड का एक अंग)
महाप्रबन्धक का कार्यालय
कुसुन्डा क्षेत्र, पो: कुसुन्डा, धनबाद, झारखण्ड

Ref No. BCCL/KA-6/Env./2019/318

Date: 08-06-2019

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

Sub : Six monthly compliance report on Environmental Clearance Conditions for the period from Oct '2018 to March '2019 in respect of Cluster-VI Group of mines, EC order no.: J-11015/183/2011-1A.II(M), dated 26-08-2013.

Dear Sir,

- Enclosed please find herewith six monthly compliance report on environmental clearance conditions for the period from Oct '2018 to March '2019 in respect of Cluster-VI Group of mines, EC order no.: J-11015/183/2011-1A.II(M), dated 26-08-2013 for your kind perusal.

With regards,


General Manager
Kusunda Area, BCCL



COMPLIANCE OF EC CONDITIONS of CLUSTER-VI

EC order no.: J-11015/183/2011-1A.II (M), dated 26-08-2013

(Oct '18 to March '19)

Sl. no.	A. Specific Conditions by MOEF:	Compliance
i	The maximum production from the two opencast section in the cluster shall not exceed beyond that for which environmental clearance has been granted.	The approved peak production capacity for whole cluster consisting of East Bassuriya Colliery, Bassuriya Colliery, Gondudih Khas Kusunda Colliery and Godhur Colliery, 7.631 MTPA. Total production from the cluster for the year 2018-19 is 3.03 MTPA which is well within the limit.
ii	The two nallahs passing through the mines should be preserved and made functional to drain the water.	Complied. In every year, before monsoon the nallahs are made clear of any obstacles to ensure proper draining of water.
iii	The coal transport to the siding will continue by road to the siding within 2 km with payloader loading into Rly. Wagons for a period of 5 years by which time the proposed silo in Rly. Siding not being affected in the Jharia Action Plan will be constructed for RLS loading into railway wagons.	Coal transport to siding is being done by road to siding with payloader loading into railway wagons.
iv	As subsidence is on higher side in Godhur colliery, special attention should be given for control and monitoring of subsidence.	For control and monitoring of threat of subsidence at fire affected area within Godhur lease hold special attention has been made by mine management. JRDA has completed survey the basties at fire affected area for evacuation & rehabilitation of the inhabitants under Jharia Master Plan and partially distributed Identity Cards, but evacuation of non-BCCL persons have not yet been done by JRDA. Colliery Management have allotted quarters at other safe place to employees residing at/near fire affected area for their early evacuation and accordingly shifting of employees is going on at the allotted quarters at newly constructed colonies at East Bassuriya and Jagjivan Nagar. Besides, Safety Committee team is there at the Colliery for inspection/supervision of Godhur for early detection of any pot hole, fume and report to mine management for early action. Pot holes detected near Muchi Basti have been filled up by incombustible materials (sand & quarry OB). Fiery

		coal is being dugged out by OC method to control fire as well as environmental pollution.
v	All old dumps will be filled back in mine voids. At the end of mining there should not be any OBD and should be only one void which shall not exceed 30 m deep.	It shall be complied. Action is being taken as specified in EMP.
vi	An increase in the CSR	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 (CSR) under the direct control of Director (Personnel) of the company. A details of CSR activities at Kusunda Area is enclosed Annexure-A 3.
vii	Dhanbad Action Plan, as CEPI, be implanted where ever is applicable.	Dhanbad Action Plan has been prepared in consultation with Jharkhand State Pollution Control Board for entire BCCL and not cluster wise. It is being implemented comprehensively for all the mines of BCCL including mines of Kusunda Area. Some of the salient actions of this cluster are enclosed as Annexure-E.
viii	Since the cluster is situated close to Dhanbad, thick green belt and residential areas should be done along the periphery of ML area. Avenue-plantation should be done along the roads which are used for coal transport and measures to arrest coal dust while transporting by covering the trucks and water sprinkling measures etc.	It is being complied. Plantation at de-coaled OB dump area is already being executed for development of green belts as per EC. Adequate water sprinkling is being done at coal transportation road regularly by mobile water sprinklers, and coal transportation is being done by covering trucks by tarpaulin as measures to control dust pollution. At degraded OB dumps at Gondudih eco-restoration work are in successful progress. Details of plantation done and programme of eco-restoration are enclosed as Annexure-B.
ix	Whereas laudable efforts have been made in drawing skill development programmes along with Planning Commission of Gol , all out efforts should be made to ensure that they are suitably employed either with the PP or elsewhere.	Training programmes for all employees are conducted regularly at mine Vocational Training Centre as per Mine VT Rule and also through NSDC (National Skill Development Corporation), and special training are being conducted at mine VT Centre, at HRD Dept. of BCCL HQ and outside of Company for development of their skill. The required details are given in Annexure-F.
x	The measure to identify in the Environmental Plan for Cluster- VI groups of mine and the conditions given in this environmental	Master Plan activities are dovetailed with compliance of environmental clearance conditions. The master plan deals with fire control and

	<p>clearance letter shall be dovetailed to the implementation of the Jharia Action Plan.</p>	<p>rehabilitation activities of fire affected areas in the leasehold of BCCL.</p> <p>By implementing complete digging out of fiery seams with water spraying in force as fire control measures air pollution and emission of Green House Gases (GHGs) from the fire affected areas are being prevented. Further rehabilitation of the families from the fire endangered area to the safe places is being taken-up with the help of State Govt. of Jharkhand.</p> <p>The Master plan is being implemented for BCCL as per the prioritization of fire and rehabilitation activities in approved Master Plan. The brief status of Rehabilitation and Fire control measures are enclosed (Annexure-D)</p>
xi	<p>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 VI 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</p>	<p>NRSC had conducted survey of fires of Jharia coalfield by remote sensing methods using thermal infra-red data and land subsidence mapping of Jharia coalfield using Inter-ferometric SAR data. Total fire affected area in Jharia Coalfield has been reduced.</p> <p>The latest report as submitted by NRSC in this regard is attached below.</p> <p>For control and monitoring of threat of subsidence at fire affected area within Godhur lease hold special attention has been made by mine management. JRDA has nearly completed survey the basties at fire affected area for evacuation & rehabilitation of the inhabitants under Jharia Master Plan and partially distributed Identity Cards, but evacuation of non-BCCL persons have not yet been done by JRDA. Colliery Management have allotted quarters at other safe place to employees residing at/near fire affected area for their early evacuation and accordingly shifting of employees is going on at the allotted quarters at newly constructed colonies at East Bassuriya and Jagjivan Nagar and Karmik Nagar. Besides, one special team headed by senior mine official has been made at Colliery for inspection/supervision of the lease hold area of Godhur for early detection of any pot hole, fume and report to mine management for early action. Under</p>

		Jharia Master Plan, fire patch of V/VI/VII/VIII seam at Gareria Section of East Bassuriya, Kusunda Area about 1,70,000 m ³ have been filled by mitti/incombustible OB, rest void will be filled up by quarry OB of East Bassuriya OC.
xii	Underground mining should be taken up after completion of reclamation of Opencast mine area.	It shall be complied.
xiii	The OB material should be crushed like sand and be used for stowing in underground mines.	At present no underground mining work is going on in the mines of Kusunda Area.
xiv	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-VI 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 –A 1, 2. Mine closure plan as per the guidelines of Ministry of Coal has been prepared by Regional Institute –II, Central Mine planning and Design Institute (CMPDI), Dhanbad. The financial provisions required for the implementation of mine closure plan are being kept in accounts, and accordingly action are being taken.
xv	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 and maintained as specified in EC (Figure 1).
xvi	No mining shall be undertaken where underground fires continue. Measure shall be taken to prevent/check such fire including in old OB dump areas where the fire could start due to presence of coal/shale with sufficient carbon content.	It is being complied. Action is being taken to control, mine fires 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).
xvii	There shall be no internal OB dumps. There will be 8 external OB Dumps covering an area of 32.84 Ha. The height of the dumps shall be 16 m and the total quantity shall be of 5.247 Mm³. The final mine voids will have an area of 66.76 ha (Filled up with water). with depth of 25 m bgl. 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	It is being complied. Action is being taken as specified in EMP. Backfilling of OB is going on concurrent with mining and at the end of mining activity the area will be re-vegetated and reclaimed as per EMP. Plantation work have already been done with the help of DFO, Dhanbad. At degraded OB dump areas eco-restoration work is in successful progress. (Annexure-B)

	<p>most of the OB are reclaimed total area 441.24 ha at the end of mining where reclaimed external OB dump 32.84 ha and internal OB Dump 120.34 ha. Green Belt over an area of 66.12 ha. Density of tree plantation 2500 trees/ ha of plants which of and abandoned. The proponent should dump all the OB material in abandoned mines.</p>	
xviii	<p>Mining shall be carried out as per statuette from the streams/nalas flowing within the lease and maintaining a safe distance from the nalas flowing along the lease boundary. A safety barrier of a minimum 60m width shall be maintained along the nalas/water bodies. The small water bodies in OC shall be protected to the extent feasible and the embankment proposed along water body shall be strengthened with stone pitching.</p>	<p>It is being followed. Embankments have been constructed as specified in EC</p>
xix	<p>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.</p>	<p>No OB is being dumped near any water bodies.</p>
xx	<p>Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation.</p>	<p>It is being complied. Yearly plantation is being done for development of green belts as per EC. For green belt development plantation / eco-restoration programme is enclosed in Annexure-B.</p>
xxi	<p>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 VI shall be implemented.</p>	<p>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 enclosed in Annexure-E.</p>
xxii	<p>The locations of monitoring stations in the Jharia Coalfields should be finalized in consultation with the Jharkhand State Pollution Control Board.</p>	<p>The locations of monitoring stations has been finalized in consultation with JSPCB and the Environmental monitoring of mines/units of BCCL as per the requirement of environmental Acts, Laws, Environmental Clearance conditions, etc . The work is now being carried out by CMPDI.</p>

xxiii	<p>The Committee stated that smoke/dust emission vary from source to source (fuel wood, coal ,fly ash from TPPs, silica from natural dust, etc) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM10 and PM2.5) 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.</p>	<p>Work Order for source apportionment study has already been issued to NEERI Nagpur on 12.05.2018. And work has been started in September 2018.</p>
xxiv	<p>The Plan for conveyor-cum—rail for Cluster-VI 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.</p>	<p>CMPDIL, RI-II has been requested to conduct study and prepare the plan in this regard. By that time transportation is being done by covering vehicle with tarpaulin cover</p>
xxv	<p>1387 no. of PAF's should be rehabilitated at cost of Rs 10,768.17 Lakhs as per the approved Jharia Action Plan.</p>	<p>It is being complied.</p>

xxvi	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.	No underground mining work is going on at present in this Area. For control and monitoring of threat of subsidence at fire affected area within Godhur lease hold special attention has been made by mine management. JRDA has completed survey the basties at fire affected area for evacuation & rehabilitation of the inhabitants under Jharia Master Plan and partially distributed Identity Cards, but evacuation of non-BCCL persons have not yet been done by JRDA. Colliery Management have allotted quarters at other safe place to employees residing at/near fire affected area for their early evacuation and accordingly shifting of employees is going on at the allotted quarters at newly constructed colonies at East Bassuriya and Jagjivan Nagar. Besides, one special team headed by senior mine official has been made at Colliery for inspection/supervision of the lease hold area of Godhur for early detection of any pot hole, fume and report to mine management for early action.
xxvii	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.	It shall be complied. Action is being taken as specified in EMP.
xxviii	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	It will be complied, if required
xxix	Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.	It will be complied, if required
xxx	Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.	It has been complied and maintained
xxxi	No depillaring operation shall be carried out below the township/colony.	It will be complied,
xxxii	A detailed CSR Action Plan shall be prepared for Cluster VI croup of mines. As stated by the Proponent, it is formulating a detailed Corporate Social Responsibility (CSR) Action Plan through Tata Institute of Social Sciences (TISS), Mumbai which will consist of need-	CSR activities have been taken up on priority basis. The details of activities is enclosed in Annexure-A.3 .

	<p>based base-line survey, CSR Action Plan, CSR Auditing and monitoring mechanism etc. Director (Per.), BCCL. along with a team visited TISS/ National CSR Hub, Mumbai on 18th Jun, 2012 for finalizing the MoU with TISS and National CSR Hub for conducting base-line survey, empanelment of NGOs and formulating the project specific CSR action plan for BCCL. The Action Plan for Corporate Social Responsibility will include 5% of the retained earnings of the previous year subject to minimum of Rs. 5 per tonne of coal production of the previous year will be provided for Corporate Social Responsibility (CSR), an amount of Rs. 381.55 lakhs/year has been year marked for the CSR activities.</p>	
xxxiii	<p>The area within Cluster VI ML existing as waste land and not being acquired shall be put for productive use under CSR and developed with fruit bearing and other useful species for the local communities. A third party evaluation shall be carried out regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integrated with activities being taken up under CSR. The details of CSR undertaken along with budgetary provisions for the village-wise various activities and expenditures there on 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.</p>	<p>CSR and other welfare activities have been taken up on priority basis. The details of activities are enclosed.</p> <p>Plantation at degraded area and office/colonies premises has been done for development of green belts as per EC. Eco-restoration work are in successful progress at degraded at OB dump areas.</p> <p>Details of plantation to be done and programme of eco-restoration are enclosed in Annexure- B.</p>
xxxiv	<p>The mine water should be treated properly before supply to the villager.</p>	<p>Mine water is treated by water filter plant before supply to villagers.</p>
Xxxv	<p>Details of transportation, CSR, R&R. and</p>	<p>It is being complied.</p>

	implementation of environmental action plan for each of the clusters-VI should be brought out in a booklet form within a year and regularly updated.	
xxxvi	Central recreation park with herbal garden should be developed for use of all inhabitants.	It shall be complied. The Eco-restoration park at GKKC has been developed and dedicated to citizens of the city.
xxxvii	Mine discharge water shall be treated to meet standards prescribed standards before discharge into natural water courses/agriculture. The quality of the water discharged shall be monitored at the outlet points and proper records maintained thereof and uploaded regularly on the company website.	Being complied. The work of monitoring of ambient air and water is being carried out by CMPDI.
xxxviii	No groundwater shall be used for the mining activities. Additional water required, if any shall be met from mine water or by recycling/reuse of the water from the existing activities and from rainwater harvesting measures. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry to dewatering of mine.	<p>No ground water is being utilized for the purpose of industrial use. Mine water has been channelized through pipelines and through delivery for its use for the community purposes after filtration. 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</p> <p>Rain water Harvesting: to catch run-off water in colonies Rain water Harvesting is being done. BCCL has already developed rain water harvesting at Koylanagar Township In Kusunda Area, proposal for rain water harvesting at colonies is under process from Civil Deptt.</p>
xxxix.	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 he used for pisciculture.	It shall be complied.
xl	Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon(May),	Tender for piezometer installation was done on 1.03.2019 No bidder participated in the tender. Hence, that tender was cancelled and re-tendering in process.

	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.	
xli	ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to conform to prescribe standards in case discharge into the natural water course.	It shall be complied.
xlii	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1:5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years(for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhubaneswar.	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. CMPDI has started to prepare "Time series of land use maps based on satellite imagery of the core zone and buffer zone.
xliii	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 eco system which were conserved in-situ and ex-situ in an identified area within the lease for reintroduction in the mine during mine reclamation and at the post mining stage for habitat restoration, the mining plan and post-mining plan, closure plan should be prepared and submitted to the Ministry;	CMPDI has prepared Mine Closure Plan for progressive mine closure activities which are being implemented at mines. Final Mine Closure Plan will be prepared in time.
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 has been established in Headquarters. They are also trained in ecological restoration, sustainable development, rainwater harvesting methods etc. At the Area level,

		<p>one Executive in each area has also been nominated as Nodal Officer (Environment) under General Manager of Area and at Project level, concerned Safety Officer under Project Officer is looking after the environment related jobs and 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. HoD (Environment) at head quarter level, co-ordinates with all the Areas and reports to the Director (Technical) and in turn he reports to the CMD of the company.</p> <p>The team is multidisciplinary and very much motivated under the guidance of company's CMD and Director (Technical) . Further capacity building at both corporate and operating level is being done.</p>
Xlv	Corporate Environment Responsibility.	
(a.)	The Company shall have a well laid down Environment Policy approved by the Board of Directors.	A well defined Corporate Environment Policy has already been laid down and approved by the Board of Directors. This is also posted on BCCL website.
(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.	Complied.
(c.)	The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.	A hierarchical system of the company to deal with environmental issues from corporate level to mine level already exists.
(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.	<u>General Conditions</u>	

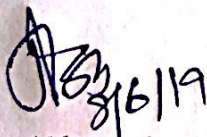
i	No change in mining technology and scope of working shall be made without 'prior approval of the Ministry of Environment and Forests.	Being followed.
ii	No change in the calendar plan of production for quantum of mineral coal shall be made.	Being followed. Production of clusters are well within the 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 PM10, PM2.5, SO2 and NOx 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.	Air quality monitoring stations and monitoring of ambient environment has been established after consultation with State Pollution Control Board. CMPDIL is presently doing the monitoring work .Results of monitoring is enclosed as Annexure-C.
iv	Data on ambient air quality (PM10, PM 2.5, SO2 and NOX) 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 recognized under the EPA rules, 1986 shall be furnished as part of compliance report.	It is being complied.
v	Adequate measures shall be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	Being complied
vi	Industrial wastewater (workshop and waste water from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	It shall be complied.


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.	It is being complied. As part of DAP condition, actions are being taken for its implementation.
viii	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analyzed through a laboratory recognized under EPA Rules, 1986.	Air quality monitoring stations and monitoring of ambient environment has been established after consultation with State Pollution Control Board. The monitoring work is being carried out by 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 the Area which provides periodical training on the safety and occupational health issue to each of the workers working in the mines.
x	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed an records maintained thereof. The quality of environment due to outsourcing and he health and safety issues of the outsourced manpower should be addressed by the company white outsourcing.	Initial Medical Examination (IME) and Periodical Medical Examination (PME) of all the personnel of the Area is carried out at Bhuli PME Centre, Bhuli, Dhanbad as per the Statutes and guidelines of Director General of Mines Safety (DGMS). Data enclosed as Annexure-F
xi	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	A full-fledged Environment Department, headed by HoD (Environment) along with a suitable qualified multidisciplinary team of executives has been established in Headquarters. They are also trained in ecological restoration, sustainable development, rainwater harvesting methods etc. At the Area level, atleast one Executive in each area has also been nominated as Nodal Officer (Environment) under General Manager of Area and at Project level, concerned Safety Officer under Project Officer is looking after the environment related jobs and 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. HoD (Environment) at head quarter level, co-ordinates with all the Areas and reports to the Director (Technical) and in turn he reports to the CMD of the company.
xii	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar	Being complied
xiii	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at www.envfor.nic.in.	It has been complied.
xiv	A copy of the environmental clearance letter shall be marked to concern Panchayat /Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.	Complied.
xv	A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.	Complied.
xvi	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project, authorities on their website and updated at least once every six months so as to	Complied.

	bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise, and soil) and critical pollutant such as PM10, PM2.5, SO2 and NO _x (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.	
xvii	The project proponent shall submit six monthly compliance reports on status of compliance the stipulated environmental clearance conditions (both in hard copy and in e-mail) to view respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB.	Being complied in time.
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 the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by E-mail.	Being complied.
6.	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.	Agreed
7.	The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project.	Agreed
8.	The Ministry or any other competent authority may stipulate any further condition for environmental protection.	Agreed

9.	Failure to comply with any of the conditions mentioned above may result in the withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.	Agreed
10.	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, 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
11.	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.	Agreed


 General Manager
 Kusunda Area


 Nodal Officer (Env't)
 Kusunda Area

Annexure-A

- 1. Coal Production of the Cluster mine wise is hereby mentioned**

Name of the mine	EC Limit (MTPA)	Actual Production (MTPA)
Godhur(NGKC)	2.6	2.4
East Bassuriya	1.95	0.265
GKKC	2.6	0.361
Bassuriya	0	0

- 2. OB BACKFILLING PROGRAMME**

At Godhur OC- After progressive extraction of coal upto V/VI/VII/VIII combined seam back filling of OB is going on.

At GKKC- progressive back filling of OB is going on after progressive extraction of total coal of all seams.

At East Bassuriya Colliery- Back filling will be done in continuous succession of total coal extraction.

3. CSR and other welfare 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(CSR) under the direct control of Director(Personnel) of the company.

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. Mine water is supplied after proper filtration in Filter Plants.
- **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. In Kusunda Area many medical /health camps in peripheral villages and in collieries and various awareness programmes have already been conducted, and is being conducted regularly by Area Medical Team.
- **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, etc.
- **Mashla Chakki centres :** Mashla Chakki centres has been established with machines to promote self employment.
- **Sports & Cultural:** Various activities are organized to propagate sports and cultures. Sports/games items and instruments are also provided with play ground.
- **Village adoption:** Lahbera – A SC/ST village nearby Dhansar Mine has been adopted for its all round development and a number of development activities have been carried out including school, health care and Ambulance facility, Mashla Chakki Centre, Community Centre, Play ground, etc.

IN KUSUNDA AREA :

A lot of CSR activities have been done in the peripheral villages in the field of medical and civil and welfare.

Health Campaigning at surrounding villages by MMV (Mobile Medical Van) :

<u>Year</u>	<u>No. of MMV camps</u>	<u>Beneficiaries</u>
2013-'14	298	11,171 patients
2014-'15	306	11,884 patients
2015-'16	380	11,013 patients

<u>Village Health Camps-</u>	<u>No. of camps</u>	<u>Beneficiaries</u>
2017-'18	109	2556

Special Health Camps in

2015-'16	5	354 patients
2016-'17	2	62 children
2017-'18	1	46 patients
2018-19	5	946 patients

CSR Clinic :

2015-'16	5842 patients
2016-'17	1387 patients
2017-18	1069 patients

Wellness Clinic

2015-'16	6244 patients
2016-'17	3922 patients
2017-18	2194 patients

In 2013-'14 & 2014-'15 and 2015-16 following civil work have been completed under CSR Activity

- Construction of compound wall for Lahbera School at Dhansar -- work completed
- Deeping of Pond at Lahbera Basti at Dhansar -- work completed
- Constr. of pcc road from Dom tola to Kali Mandir at -- work completed

Barki Bowa Village

- Constr. of pcc road from near house of Vikash Rajak -- work completed

to main road at Satitand Village

- Constr. of pcc road from Parduman Singh Chowk to near -- work completed

house of Sri Kishore Pandey at Ranguni Panchayat

- Constr. of Yatri shed at Dutta Tola near Hanuman Mandir -- work completed of Ranguni Panchayat

- Constr. of boundary wall , Chabutra and a shed near Gram Dewata -- work completed

at Dhansar

- Construction of PCC road in Lahbera Basti at Dhansar -- work completed
- Construction of 318 toilets in 179 schools in Chaibasa

has been undertaken by Kusunda Area under the Pradhan Mantri

Swatchh Vidyalaya Yojana . Construction of toilets in 25 boys' school,

15 girls' schools and 139 Co-education

School have been undertaken.

-- Out of 318, 236 toilets have been completed.

Financial grants given to various privately managed schools is Rs 21,54,000.00 for the period of 1.04.2018 to 31.03.2019

Annexure-B

- **Plantation-** At Gondudih- Khas Kusunda Colliery about 500 no. bamboo-gabion plantation have already been done.
- **At 1st Ecological restoration site** a total of about 6402 no. plants and plenty of grass-seeds in an area of 2.0 Ha have been planted successfully with encouraging results, and natural eco-system is being established there with increasing flora & fauna (Fig.2).
- **At 2nd. eco-restoration site** (about 1.79 Ha OB dump- area) about 2400 plants along with seeds of grass and shrubs have spread over since 2015-'16 successfully.
- **And at 3rd. site,** (about 3.0 Ha OB dump area) about 5322 plants and plenty of grass seeds have been planted
- **A 4th site of area about 4.99 Ha** has been taken up in the year 2018-19. Till March, 2019 a total of 12,482 saplings have been planted.

PLANTATION/ECOLOGICAL-RESTORATION PROGRAMME

Plantation/Ecological Restoration Programme (Cluster-VI & part of Cluster-VII mines of Kusunda Area) :

YEAR	CLUSTER VI & CLUSTER VII(Part under Kusunda Area)	No.of saplings/plants
2019-20	More Planation in Existing Eco Restoration	5000
2020-21	6.00 Ha(approx.)	15000
2021-22	6.00 Ha(approx.)	15000

Annexure-C

ENVIRONMENTAL MONITORING REPORT OF CLUSTER – VI

(FOR THE Q.E. March, 2019)

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 – VI**

(FOR THE MONTH MARCH, 2019)

E. C. no. J-11015/183/2011-IA.II (M) dated 26.08.2013.

CMPDI

ISO 9001 Company
Regional Institute-II
Dhanbad, Jharkhand

CONTENTS

SL. NO.	CHAPTER	PARTICULARS	PAGE NO.
1.	CHAPTER - I	EXECUTIVE SUMMARY	3-5
2.	CHAPTER-II	INTRODUCTION	6
3.	CHAPTER-III	ANALYSIS & RESULTS	7-11
4.	CHAPTER-IV	STANDARDS & PLANS	12-15

EXECUTIVE SUMMARY

1.0 Introduction

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

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

2.0 Sampling location and rationale

2.1 Ambient air sampling locations

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

2.2 Water sampling stations

The Water sampling stations were selected for mine sump water.

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 rationale has been based on the guidelines stipulated by MoEF&CC, consent letter of SPCB, as well as other statutory requirements.

3.0 Methodology of sampling and analysis

3.1 Ambient air quality

Parameters chosen for assessment of ambient air quality were Particulate Matter (PM₁₀), Fine Particulate Matter (PM_{2.5}), Sulphur Di-oxide (SO₂) and Nitrogen Oxides (NO_x). Respirable Dust Samplers (RDS) and Fine Dust Sampler (PM_{2.5}

sampler) were used for sampling of PM₁₀, SO₂, & NO_x and Fine Dust Sampler (PM_{2.5} 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 analyzed in Environmental Laboratory of CMPDI, RI-II, Dhanbad.

3.2 Water quality

Water samples were collected as per standard practice. The Mine effluent samples were collected and analyzed for four parameters on fortnightly basis. Thereafter the samples were preserved and analyzed at the Environmental Laboratory of CMPDI, RI- II, Dhanbad.

3.3 Noise level monitoring

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

4.0 Results and interpretations

4.1 Air quality

It has been seen from the analysis results that the 24 hours average concentration parameters like PM₁₀, PM_{2.5}, SO₂ 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 PM₁₀& 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.

The following preventive and suppressive mitigative measures can be undertaken to contain the pollution level within prescribed level:-

- Wet drilling and controlled blasting should be practice.
- Explosive used should be optimised to restrict the dust generation.
- Transportation roads should be permanently asphalted free of ruts, potholes etc.
- Water should be sprayed on coal transportation road, service road more frequently and at regular interval.
- Dust from roads should be removed physically or mechanically.
- Greenbelts around industrial sites, service building area besides Avenue plantation along roads should be created.
- Coal dust should be suppressed by using fixed sprinklers.
- Regular maintenance of plant and machinery should be undertaken.

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 were within permissible limits.

4.3 Noise Level

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

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 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-VI is situated in the Northern part of the Jharia coalfield. It includes a group of 4 Mines (viz. East Basseriya Colliery , Gondudih Khas Kusunda colliery and Godhur Colliery. The Cluster – VI is situated about 25 - 30 kms from Dhanbad Railway Station. The mines of this Cluster–VI 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 Sendra and Ekra nalas.
- 1.2 The Cluster-VI is designed to produce 5.87 MTPA (normative) and 7.631 MTPA(peak) capacity of coal. The average grade of coal W – III & W- IV.

The Project has Environmental Clearance from Ministry of Environment, Forest and Climate Change (MoEF&CC) for a rated capacity 5.87 MTPA (normative) and 7.631 MTPA (peak) capacity of coal production vide letter no. J-11015/183/2011-IA.II (M) dated 26thAugust, 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 PM₁₀, PM_{2.5}, SO₂, NO_x monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets, other conditions regarding water / effluent and noise level monitoring in consultation with the State Pollution Control Board.”

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

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) Basseriya Managers Office (A9): Industrial Area

The location of the sampling station is $23^{\circ} 48' 11.53''$ N & $86^{\circ} 22' 17.50''$ E. The sampler was placed at 1.5 m above the ground level of Safety Office.

II. BUFFER ZONE Monitoring Location

i) Nichitpur (A8) : Industrial Area

The location of the sampling station is $23^{\circ} 48' 18.59''$ N $86^{\circ} 21' 30.93''$ E. The sampler was placed at 1.5 m above the ground level at Safety office of Nichitpur colliery.

ii) Kusunda OCP (A10) : Industrial Area

The location of the sampling station is $23^{\circ} 46' 49.07''$ N & $86^{\circ} 24' 15.71''$ E. The sampler was placed at 1.5 m above the ground level of Safety Office.

iii) Pootki Balihari Office (A16): Industrial Area

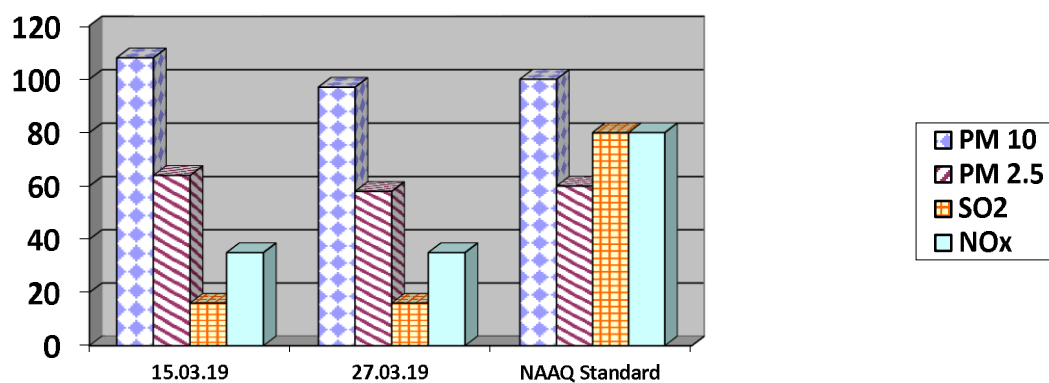
The location of the sampling station is $23^{\circ} 45' 17.23''$ N $86^{\circ} 21' 46.27''$ E, The sampler was placed at 1.5 m above the ground level of Colliery Office.

AMBIENT AIR QUALITY DATA

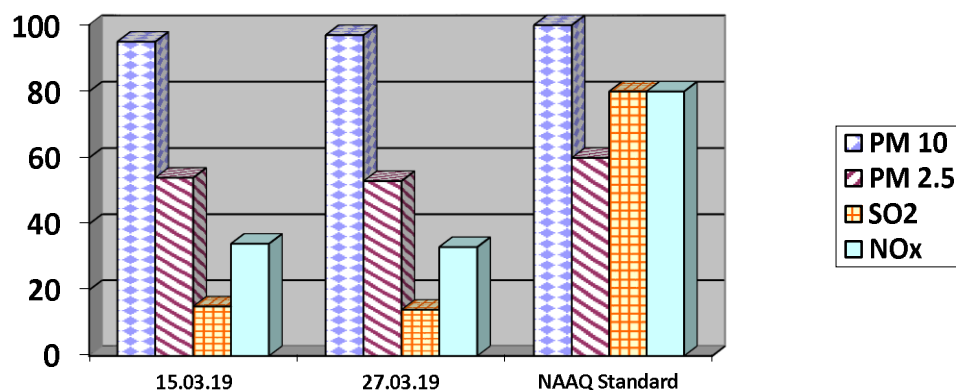
Cluster – VI, Bharat Coking Coal limited Month: **MARCH, 2019**

Year: **2018-19.**

Station Name: A9 – Basseriya Managers Office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	15.03.19	108	64	16	35
2	27.03.19	97	58	16	35
	NAAQ Standard	100	60	80	80



Station Name: A8 – Nichitpur		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	15.03.19	95	54	15	34
2	27.03.19	97	53	14	33
	NAAQ Standard	100	60	80	80



सुमन सोमिन, रुद्र

Analysed By
JSA/SA/SSA

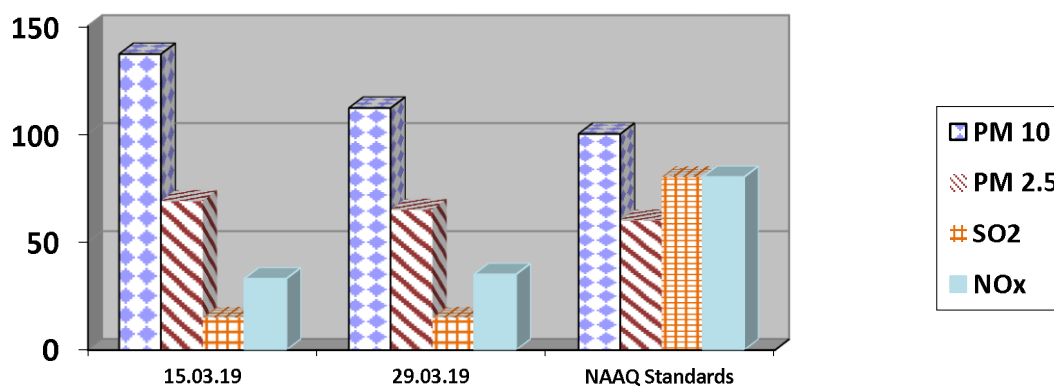
✓

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

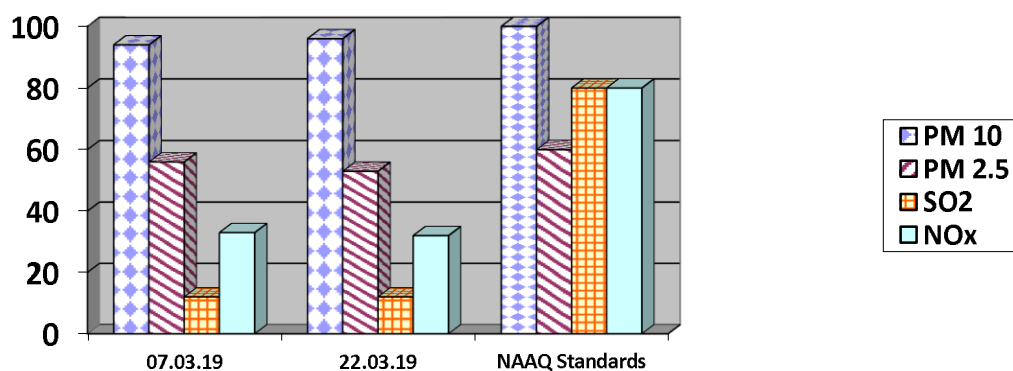
21/03/19

Approved By
HOD(Mining/Environment)
RI-2, CMPDI, Dhanbad

Station Name: A10 – Kusunda OCP		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	15.03.19	137	69	15	33
2	29.03.19	112	65	15	35
	NAAQ Standards	100	60	80	80



Station Name: A16 Pootki Balihari Office		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	07.03.19	94	56	12	33
2	22.03.19	96	53	12	32
	NAAQ Standards	100	60	80	80



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

सुमन सेठिन, रुद्र

Analysed By
JSA/SA/SSA

✓

Checked By
Lab In Charge
RI-2, CMPDI, Dhanbad

21/03/19

Approved By
HOD(Mining/Environment)
RI-2, CMPDI, Dhanbad

WATER QUALITY MONITORING

3.1 Location of sampling sites

(Refer **Plate No. – II**)

Mine Discharge of East Basseriya (MW6)

A sampling point is fixed to assess the effluent quality of Mine discharge. This location is selected to monitor effluent discharge in to Ekra Nala.

3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analyzed for four parameters on fortnightly basis at the Environmental Laboratory of CMPDI RI-II, Dhanbad.

3.3 Results & Interpretations

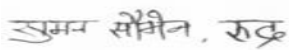
The results are given in tabular form along with the applicable standards. Results are compared with Schedule - VI, effluent prescribed by MoEF&CC. Results show that most of the parameters are within the permissible limits.

WATER QUALITY DATA

(EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: Cluster -VI		Month: MARCH, 2019	Name of the Station: Mine Discharge of East Basseriya	
Sl. No.	Parameters	MW6 First Fortnight	MW6 Second Fortnight	As per MOEF General Standards for schedule VI
		15.03.19	28.03.19	
1	Total Suspended Solids	44	42	100 (Max)
2	pH	7.86	7.96	5.5 - 9.0
3	Oil & Grease	<2.0	<2.0	10 (Max)
4	COD	20	28	250 (Max)

All values are expressed in mg/lit except pH


 Analysed By
 JSA/SA/SSA


 Checked By
 Lab In Charge
 RI-2, CMPDI, Dhanbad


 Approved By
 HOD(Mining/Environment)
 RI-2, CMPDI, Dhanbad

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

- i) Basseriya Managers Office (N9)
- ii) Nichitpur (N8)
- iii) Kusunda OCP (N10)
- iv) Pootki Balihari Office (N16)

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

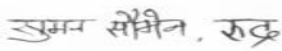
Ambient noise levels were recorded during day time and the observed values were compared with standards prescribed by MoEF&CC. The results of Noise levels recorded during day time on fortnightly basis are presented in tabular form along with the applicable standard permissible limits. The observed values in terms of 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 Project: Cluster -VI			Month: MARCH, 2019		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Nichitpur (N8)	Industrial area	15.03.19	51.7	75
2	Nichitpur (N8)	Industrial area	27.03.19	58.8	75
3	Basseriya Managers Office (N9)	Industrial area	15.03.19	56.3	75
4	Basseriya Managers Office (N9)	Industrial area	27.03.19	63.3	75
5	Kusunda OCP (N10)	Industrial area	15.03.19	60.6	75
6	Kusunda OCP (N10)	Industrial area	29.03.19	62.2	75
7	Pootki Balihari Office (N16)	Industrial area	07.03.19	69.3	75
8	Pootki Balihari Office (N16)	Industrial area	22.03.19	73.5	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,


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 JSA/SA/SSA


 Checked By
 Lab In Charge
 RI-2, CMPDI, Dhanbad


 Approved By
 HOD(Mining/Environment)
 RI-2, CMPDI, Dhanbad

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 <ul style="list-style-type: none"> • Jharia • Raniganj • Bokaro 	Suspended Particulate Matter (SPM)	Annual Average * 24 hours **	500 $\mu\text{g}/\text{m}^3$ 700 $\mu\text{g}/\text{m}^3$	- High Volume Sampling (Average flow rate not less than 1.1 m^3/min)
	Respirable Particulate Matter (size less than 10 μm) (RPM)	Annual Average * 24 hours **	250 $\mu\text{g}/\text{m}^3$ 300 $\mu\text{g}/\text{m}^3$	Respirable Particulate Matter sampling and analysis
	Sulphur Dioxide (SO_2)	Annual Average * 24 hours **	80 $\mu\text{g}/\text{m}^3$ 120 $\mu\text{g}/\text{m}^3$	1.Improvedwest and Gaeke method 2.Ultraviolet fluorescene
	Oxide of Nitrogen as NO_2	Annual Average * 24 hours **	80 $\mu\text{g}/\text{m}^3$ 120 $\mu\text{g}/\text{m}^3$	1. Jacob & Hochheiser Modified (Na-Arsenic) Method 2. Gas phase 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.

** 24hourly/8hourly 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 I, Rural and other Areas	Ecologically Sensitive Area (Notified by Central Government)	
Sulphur Dioxide (SO₂), µg/m³	Annual * 24 Hours **	50 80	20 80	-Improved West and Gaeke Method -Ultraviolet Fluorescence
Nitrogendioxide (NO₂), 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 PM₁₀, 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 (O₃) , 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 (NH₃), µg/m³	Annual * 24 Hours **	100 400	100 400	-Chemiluminescence -Indophenol blue method
Benzene (C₆H₆), 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.

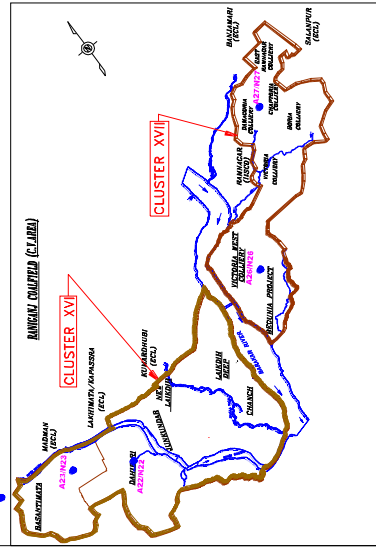
NOTE: Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigations.

BHARAT COKING COAL LIMITED	
Sites	Name of Stations (AIR/NOISE)
Bharat	BHARAT COAL WAREHOUSE
	A35
	DIGUDA WAREHOUSE
	A36
	MAROLA WAREHOUSE
	A37
	KATHUA DIGUMIRLA COLLIERY

Legend

Regional Officer, Dhanbad
Jharkhand State Pollution Control Board
(Signature)

HoD (Envl.)
Bharat Coking Coal Limited
(Signature)



INDEX

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