

ENVIRONMENTAL CLEARANCE COMPLIANCE OF
CLUSTER-XI (GRANTED VIDE J-
11015/77/2011-IA.II (M) Dated 26.08.2013)

(OCTOBER'18 – MARCH'19)

Sl. No.	A. Specific Conditions by MOEF:	Compliance
i.	No mining shall be undertaken in/under the forestland until prior forestry clearance has been obtained under the provisions of FC Act 1980.	Application for forest clearance has been submitted online with reference number FP/JH/MIN/9699/2015 in feb'19, it is presently under process.
ii.	You will need to seek and obtain approval under the FC Act for diversion of the entire forest land located within the mining lease within a period of two years from 1.2.2013 i.e. date of issue of FC Division's guidelines vide. no. 11-362/2012-FC, failing which the mining lease area will be reduced to the non-forest area plus the forest area for which you have been able to obtain the FC at the end of this time period. In the case of reduction in mine lease area, you will need to get a revised mining plan approved from the Competent Authority for reduced area and enter into a new mining lease as per reduced lease area. The EC will be construed to be available for the mining lease area as per the revised mining lease deed.	Revised Mining plan along with Mine Closure plan of Moonidih Colliery of cluster XI was approved by the Board in empowered sub-committee meeting of BCCL held on 29.01.2019.
iii.	The maximum production in the cluster shall not exceed beyond that for which environmental clearance has been granted for the cluster XI.	It is being complied. The production from the cluster is within the limit for which environmental clearance has been granted. Enclosed as Annexure I .
Iv.	The open cast quarries of the abandoned mines should be backfilled to the ground level and restored with native species.	Shall be complied. Now it is not applicable.
V.	All coal from smaller UG mines should be transported by high capacity and mechanically covered trucks/ tippers.	Complied. Various mechanically covered trucks Manufacturers for the transportation of Coal and OB in India have been contacted and things are under process. At present coal transportation has been done by trucks with tarpaulin cover. Covering of truck has been made mandatory in the transportation contract.
vi.	Green belts shall be developed on both sides of the roads.	Complied. A garden with fountain has been developed near Moonidih Colliery office. Time to time plantation is done either departmental or with the help of forest department Dhanbad.

vii.	Action plan for quenching of fires and rehabilitation alongwith the details of master plan be submitted to the MoEF for Monitoring purpose.	Complied. Master Plan is already uploaded on BCCL website.
viii.	Presently coal to Munidih washery from other mines of the cluster is taking place through NH. An alternate route for coal transportation may be explored.	No alternate route for coal transportation has been explored till date.
ix.	For understand the composition of emissions from coal mine fires, BCCL may.	Agreed
x.	Initiate action as proposed in the visit report of the EAC to Dhanbad.	Action as proposed in the visit report of EAC has initiated.
xi.	The approved mining plan be submitted to the MoEF.	Revised Mining plan along with Mine Closure plan of Moonidih Colliery of cluster XI was approved by the Board in empowered sub-committee meeting of BCCL held on 29.01.2019.
xii.	The measure to identify in the Environmental Plan for Cluster- XI groups of mine and the conditions given in this environmental clearance letter shall be dovetailed to the implementation of the Jharia Action Plan.	Environmental plan for Custer XI group of mines and the conditions given on the environment clearance has been dovetailed with Jharia Action Plan.
xiii.	The proponent shall prepare time -series maps of the Jharia Coalfields through NRSA to monitor and prevent fire problems in the Jharia Coalfields by Isothermal mapping /imaging and monitoring temperatures of the coal seams (whether they are close to spontaneous ignition temperatures) and based on which, areas with potential fire problems shall be identified. Measures to prevent ingress of air (Ventilation) in such areas, to prevent restart fresh/spread fires in other areas including in mines of cluster II shall be undertaken. Expertise available internationally could also be utilized for control of fire in Jharia Coalfields and for their reclamation and to further minimize time for fire and subsidence control. 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.	It has been complied. NRSC was engaged for preparation of time series maps to monitor and prevent fire problems of Jharia Coalfield by Isothermal mapping/imaging and monitoring temperatures of the coal seams and NRSC has submitted their final report in January 2018 in which the area of fire has been reduced from 9.00 Km2 to 3.28 km2. NRSC report is enclosed as Annexure II.

xiv.	The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilized with plantation so as to withstand the peak water flow and prevent mine inundation.	It is being complied
xv.	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
xvi.	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.	Complied as per statute.
xvii.	Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation. A total area of 254.67 ha shall be reclaimed and afforested.	Green belt is being developed and 5 ha of ecological park (taken up in FY 2015-16), 2 ha taken up in FY 2016-17 for plantation and 2 Ha is taken up for plantation in FY 2017-18 under P.B. Area of cluster XI and 5 Ha is taken up in FY 2018-19 under PB.Area and 1.5 ha taken in Moonidih under W.J.Area for FY 2018-19.
xviii.	Details of transportation, CSR, R&R and implementation of environmental action plan for the clusters- XI should be brought out in a booklet form within a year and regularly updated.	Complied. Enclosed as Annexure III.
xix.	Specific mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted are and relevant for Cluster XI shall be implemented.	It is being complied in the name of Dhanbad Action Plan. It has been prepared in consultation with Jharkhand Pollution Control Board for entire BCCL, not on cluster basis. It is being implemented comprehensively for all the mines of BCCL. Some of the salient actions of this cluster are as under: <ol style="list-style-type: none"> 1. Covered Truck Transport. 2. Construction of Pucca Road. 3. Construction of water reservoir for mine water utilization. 4. Plantation. Etc. Enclosed as Annexure IV.

xx.	<p>The locations of monitoring stations in the Jharia Coalfields should be finalized in consultation with the Jharkhand State Pollution Control Board. The Committee stated that smoke/dust emission vary from source to source (fuel wood, coal, fly ash from TPPs, silica from natural dust, etc.) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM₁₀ and PM_{2.5}) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.</p>	<p>It is being complied. Establishment of ambient environment quality monitoring stations has been finalized with the consultation of Jharkhand State Pollution Control Board. Enclosed as Annexure V</p> <p>NEERI Nagpur was approached for conducting Source Apportionment Study BCCL for compliance of EC conditions. The proposal regarding Conducting the Source Apportionment Study has been submitted by NEERI. Work Order had already been issued to NEERI Nagpur on 12.05.2018. And work has been started in September 2018. Field data collection is scheduled in Summer 2019.</p>
xxi.	<p>The proponent will continue the existing Road-Rail transport network system in view of the implementation of the Master Plan (for 10 years) and another 5 years gestation period after the completion of Master Plan for consolidation of the backfilled dug out fire areas and unstable areas is required. All mitigation measures (like covered trucks, green belting on either sides of the roads, enhanced water sprinkling, strengthening and maintaining the roads etc.) shall be adopted up to 15 years (phase-I) with the existing road-rail transport system. In phase-II, BCCL shall implement conveyor-cum-rail transport to avoid movement of trucks within the cluster for coal transportation in Phase-II which shall start after 15 years. Transportation of coal shall be by Rail and Conveyor belt, minimizing the existing road transport system in all the mines of the cluster and shall continue after 15 years. Loading of coal by pay loaders shall be discontinued. Adequate number of suitably designed off-take points shall be provided.</p>	<p>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 regard. Meanwhile transportation is being done by covering vehicle with tarpaulin cover.</p> <p>No OEM/HEMM Equipment Manufacturer supplies the mechanically covered trucks for the transportation of Coal and OB in India. Possibility is being explored at local level. By that time transportation is being done by covering vehicle with tarpaulin cover.</p> <p>Enclosed as Annexure VI.</p>
xxii.	<p>16944 nos of PAFs should be rehabilitated at cost of Rs 53776.60 Lakhs as per the approved Jharia Action Plan.</p>	<p>Implementation of master plan has already been started through Jharia Rehabilitation and Development Authority (JRDA), Dhanbad</p>

xxiii.	Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.	It is being complied and will be implemented as the case may be. Regular subsidence monitoring is done at underground mines.
Xxiv.	Coal Extraction shall also be optimized in areas where agricultural production is continuing. Some pillars shall be left below the agricultural land. No depillaring & coal extraction should be carried out below habitation, H.T. Lines & beneath road, water bodies.	It is being complied. Being implemented as per statute.
Xxv.	Subsidence shall be monitored closely and if subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement with the landowners.	It is being complied.
xxvi.	3-tier plantation should be developed 2 km stretch of road from the mine using native species.	It is being complied. Plantation is being done on roadside in non-coal bearing areas and colonies. Carbon sequestration study may be conducted to assess the impact of plantation to reduce the pollutants.
xxvii.	Water sprinkling system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.	It is being also complied in respect of all mines of P.B.Area. Mobile water tankers are used for spraying water. Sprinkler arrangement provided in respect of Moonidih washery and Moonidih mine and also some more new sprinkler arrangement has been done near transfer points and haulage roads.
xxviii.	A progressive afforestation plan shall be prepared and implemented over the mine lease area acquired and shall include areas under green belt development, areas along roads, infrastructure, along ML boundary and township etc., by planting native species in consultation with the local DFO/Agriculture Department.	It is being complied. <ol style="list-style-type: none"> 1. 1380 plants were planted near algaria site till March 2016 2. 2000 plants are planted between April and September 2016 3. 4000 saplings have been Planted from April' 17 to March' 18 4. 4000 saplings are planted from April' 18 to till date. 5. 3700 Sapling are planted from April' 18 to till date at Moonidih Eco-Site of 1.5 Ha. Area.

xxix.	Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided.	Agreed. Presently there no acid water in Cluster-XI mines.
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Xxx.	Mine discharge water outside the ML shall be monitored, particularly for TDS and treated to conform to prescribed levels before discharge into the natural environment.	It is being complied. Being Monitored. Moonidih washery is operating under closed water circuit system. Pilot scale Mine Water Treatment Plant is also installed in P.B. Area to convert mine water into drinking water.
Xxxi.	The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource, in case water table shows a declining trend. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.	It is being complied. Mine water is being used for the industrial as well as domestic non-drinking purpose. Mine water is also utilized for the community and irrigation purposes.
xxxii.	Besides carrying out regular periodic health checkup of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health checkup for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmadabad within a period of one year and the results reported to this Ministry and to DGMS.	It is being complied. Draft report submitted by NIOH has been scrutinized by Medical department, BCCL. NIOH have been requested to arrange a final closure presentation at BCCL and to submit the final report as well. NIOH also done an Awareness workshop on occupational diseases.
xxxiii.	The mining in the existing mines would be phased out after expiry of the current mining lease and after reclamation of mined over area. The operating mines may be analyzed and monitored for compliance of conditions, having bearing with movement of wild life until such time they are closed/phased out.	Complied
xxxiv.	Sufficient coal pillars shall be left unextracted around the air shaft (within the subsidence influence (area) to protect from any damage from subsidence, if any.	Complied .Already implemented in case of Moonidih Mine. Complied in respect of all mines of P.B.Area.
xxxv.	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	Plantation in BCCL is being done on 3-tier basis, in which both, Monocotyledonae (Monocots) such as grasses, bamboo etc and Dicotyledonae (Dicots) such as sheesham, mango etc are being planted for developing an extensive root system. The Monocots having fibrous root system helps in developing the root density at the topsoil level while, Dicots having the tap root system have a distributed root density in topsoil, subsoil and regolith layer of soil. These two

		root system together forms the high root density system.
xxxvi.	Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by Cutting drains.	Being Complied
xxxvii.	Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.	Being Complied.
xxxviii.	The CSR Action Plan shall consist of need-based CSR Action Plan, CSR Auditing and monitoring mechanism etc. The proponent will spend 5 % of the retained earning of the previous year subject to a minimum of Rs. 5/- per tonne of coal production which should be adjusted as per the annual inflation The progress made thereon shall be uploaded on the company annually on the company website. Monitoring of the impacts of activities under CSR shall be carried out periodically.	Being Complied. CSR work is handled at Headquarter level and every area is assigned work. CSR work carried out in FY 2017-18 (October' 18 till March' 19) is enclosed as Annexure – III
xxxix.	Third party evaluation shall be got carried out regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integrated with activities being taken up under CSR. The details of CSR undertaken along with budgetary provisions for the village-wise various activities and expenditure thereon shall be uploaded on the company website every year. The company must give priority to capacity building both within the company and to the local youth, who are motivated to carry out the work in future. The gap/space available between the entire mine area 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.	It is being complied.
XI.	Central recreation park with herbal garden should be developed for use of all inhabitants.	Ecological park of (5 hectare in FY 2015-16 and 2 hectare in FY 2016-17) in cluster XI is under construction.

Xli.	The mine water should be treated properly before supply to the villager.	It is being complied. An action plan for the utilization and treatment of surplus Mine Water has been prepared by Environment, Civil and CSR department conjointly. In this regard, 26 Mines have been identified for the implementation of scheme in the Phase-I. A pilot scale mine water treatment plant in collaboration with CSIR, CIMFR is installed at P.B. Area office to convert mine water into drinking water.
Xlii	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.	It is being complied. Mine discharge water is being allowed to settle down in the mine sumps before passing through sedimentation tank. CMPDIL is carrying out the environmental monitoring work. Mine water quality data has been enclosed as Annexure VII.
Xliii	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.	As working in PB area does not approach combined seam therefore water reservoir cannot be formed. In due course this point will be complied in future.
Xliv	Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.	It is being complied. CMPDI RI-II has prepared a report for Location and design of Piezometers. Groundwater monitoring data has been enclosed as Annexure VIII.
xlvi	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.	There is no CHP under P.B.Area and W.J.Area of Cluster XI.

xlvi	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.	Complied. Presently a time series map of vegetation cover in the Jharia Coal Field is being carried out through CMPDI, Ranchi using satellite imagery. Further CMPDI has been requested to prepare “Time series of land use maps based on satellite imagery of the core zone and buffer zone. Report of land use pattern monitoring submitted by CMPDI has been enclosed as Annexure –IX.
xlvi.	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five year before mine closure for approval. Habitat Restoration Plan of the mine area shall be carried out using a mix of native species found in the original ecosystem, which were conserved in-situ and ex-situ in an identified area within the lease for reintroduction in the mine during mine reclamation and at the post mining stage for habitat restoration. the mining plan and post- mining plan, closure plan should be prepared and submitted to the Ministry;	It shall be complied. It will be complied when mine life will reach its final phase. Mine Closure Plan is approved in respect of Moonidih Colliery by CMPDI.
xlvi.	A separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.	Complied.
xlix.	The raw coal, washed coal and coal wastes (rejects) shall be stacked properly at earmarked.	Being Complied by Washery
1.	Site(s) within stockyards fitted with wind breakers/shields. Adequate measures shall be taken to ensure that the stored minerals do not catch fire.	Being Complied
li.	Hoppers of the coal crushing unit and washery unit shall be fitted with high efficiency bag filters and mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of closed belt conveyor systems and from transportation roads.	Being Complied. At Moonidih Washery some more water sprinklers have been added nearby Hopper of Coal crushing unit for Water spraying and also mobile water tanker are used for spraying water in transportation road.

lii.	All approach roads shall be black topped and internal roads shall be concreted. The roads shall be regularly cleaned with mechanical sweepers.	Already implemented in respect of Moonidih mine Cleaning of roads done manually.
liii.	Green belt of 3 ha shall be developed all along the periphery of the site, along the areas such as the washery unit, crushing unit, and stockyard. A 3-tier avenue plantation would be developed along vacant areas, near washery, storage yards, loading points and transfer points and along internal roads and main approach roads and on the road upto the railway siding and at the siding. The road between the coal washery and the main -road shall be black topped and thick 3-tier vegetation between the washery and villages/habitations shall be developed. In addition, a 10m thick green avenue plantation in the transportation route from washery to Majhri Railway Siding (of WCL) shall be provided in consultation with and approval of WCL under CSR.	Complied. Here there is no Majhri Railway siding (of WCL).
liv.	Trucks engaged for mineral transportation outside the washery upto the railway siding shall be optimally loaded. The trucks shall be properly maintained and emissions shall be below notified limits. Facilities for parking of trucks carrying raw coal from the linked coalmines shall be created within the Unit.	Being Complied. The trucks which are carrying coal from different collieries to Moonidih washery are regularly maintained in their workshop and are parked at proper place.
lv.	Records of quantum of coal (in TPD) and ash content of raw coal being washed, clean coal and coal rejects produced from every batch of washing shall be maintained and details thereof uploaded on the company website.	Being Complied. Records of Coal fines/Slurry are maintained by Moonidih coal washery.
lvi.	The washery unit shall be a zero-discharge facility and no wastewater shall be discharged from the washery into the drains/natural watercourses. Recycled water shall be used for development and maintenance of green belt and in the Plant Operations.	There is zero discharge from the washery and water is recycled for the plant operations and for the development of plantation inside the washery premises.

lvii.	Coal fines shall be recovered from the coal slurry, washery discharge and used in power generation and records of quantum of coal fines collected and used shall be properly maintained.	Stock of slurry is maintained, records of coal fines are maintained.
lviii.	No additional groundwater shall be used for the Plant Operations. Any additional water requirement envisaged shall be obtained by recycle/reuse to the maximum extent and from rainwater harvesting measures.	Complied.
lix.	Heavy metal content in raw coal, and washed coal shall be analysed once in a year and records maintained thereof.	Agreed
lx.	Corporate Environment Responsibility:	Enclosed as Annexure-X
a.	The Company shall have a well laid down Environment Policy approved by the Board of Directors.	Agreed
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.	Agreed
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.	Agreed
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.	Agreed
Sl. No	B. General Conditions Conditions by MOEF:	Compliance
i.	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	Being Complied.

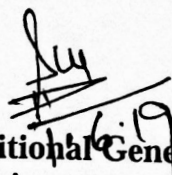
ii.	No change in the calendar plan of production for quantum of mineral coal shall be made.	Being Followed.
iii.	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM10, PM 2.5, SO 2 and NOx monitoring. Location of the stations shall be 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.	The fixing up of locations of monitoring stations in the Jharia Coalfields has been taken up with the Jharkhand State Pollution Control Board. Enclosed as ANNEXURE V The work of monitoring of ambient environment has been done through CMPDI, Regional Institute-II, Dhanbad having laboratory recognized under the EPA Rules.
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 recognized under the EPA rules, 1986 shall be furnished as part of compliance report.	It is complied. Monitoring for the same is done by CMPDI which is having own laboratory recognized under EPA Rules. Enclosed in Annexure-XI.
v.	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	Being Complied.
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.	CMPDI Dhanbad is carrying out monitoring of environmental quality work. There is arrangement for treatment of effluent discharge to prescribed standards.
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.	Complied. Work Order had already been issued to NEERI Nagpur on 12.05.2018. And work has been started in September 2018. Field data collection is scheduled in Summer 2019.
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	Presently, CMPDI Dhanbad is carrying out regular monitoring of environmental quality work.

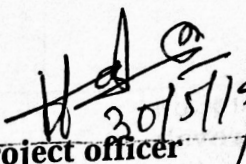
	a laboratory recognized under EPA Rules, Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognized under EPA Rules, 1986.	
ix.	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.	Being complied. Vocational training Centers under separate Human Resource Development Department is Conducting regular training programme on these issues. Enclosed as Annexure XII.
x.	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.	Initial Medical Examination (IME) and Periodical Medical Examination (PME) of all the personnel are carried out as per the Statutes and Director General of Mines Safety (DGMS) `s guideline. Annexure XII.
xi.	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	A full-fledged Environment Department, headed by a HoD (Environment) along with a suitable qualified multidisciplinary team of executives which includes Environment, Mining, Excavation, 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.
xii.	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar.	It is being complied.

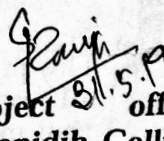
xiii.	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at 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 be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.	Complied.
xvi.	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant, such as PM₁₀, PM_{2.5}, 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.	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 Ranchi 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.	Agreed .It has been complied & 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 to 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.
7	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.	Complied.
8	The proponent is required to obtain all necessary clearances/approvals that may be required before the start of the project.	Complied.
9	The Ministry or any other competent authority may stipulate any further condition for environmental protection.	Complied.
10	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.	Complied.

11	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.	Complied.
12	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.	Complied.


 Additional General Manager
 P.B. Area
 Additional General Manager
POOTKEE BALIHARI AREA
B.C.C.L. DHANBAD


 Project officer
 Moonidih Washery
 Project Officer
Moonidih Coal Washery
WWZ


 Project office
 Moonidih Colliery
PROJECT OFFICE AGE
MOONIDIH COLLIERY
B.C.C.L. LTD.

ANNEXURE- I

EC grant for cluster XI is 5.08 and 6.604 MTPA normative and peak production respectively.
The production from area is 0.216 MT for six months, which is well within the limits.

<u>Production From October' 18 to March' 19 (Tonne)</u>	
Cluster XI	Production
Total Production from cluster is	216355

ANNEXURE-II

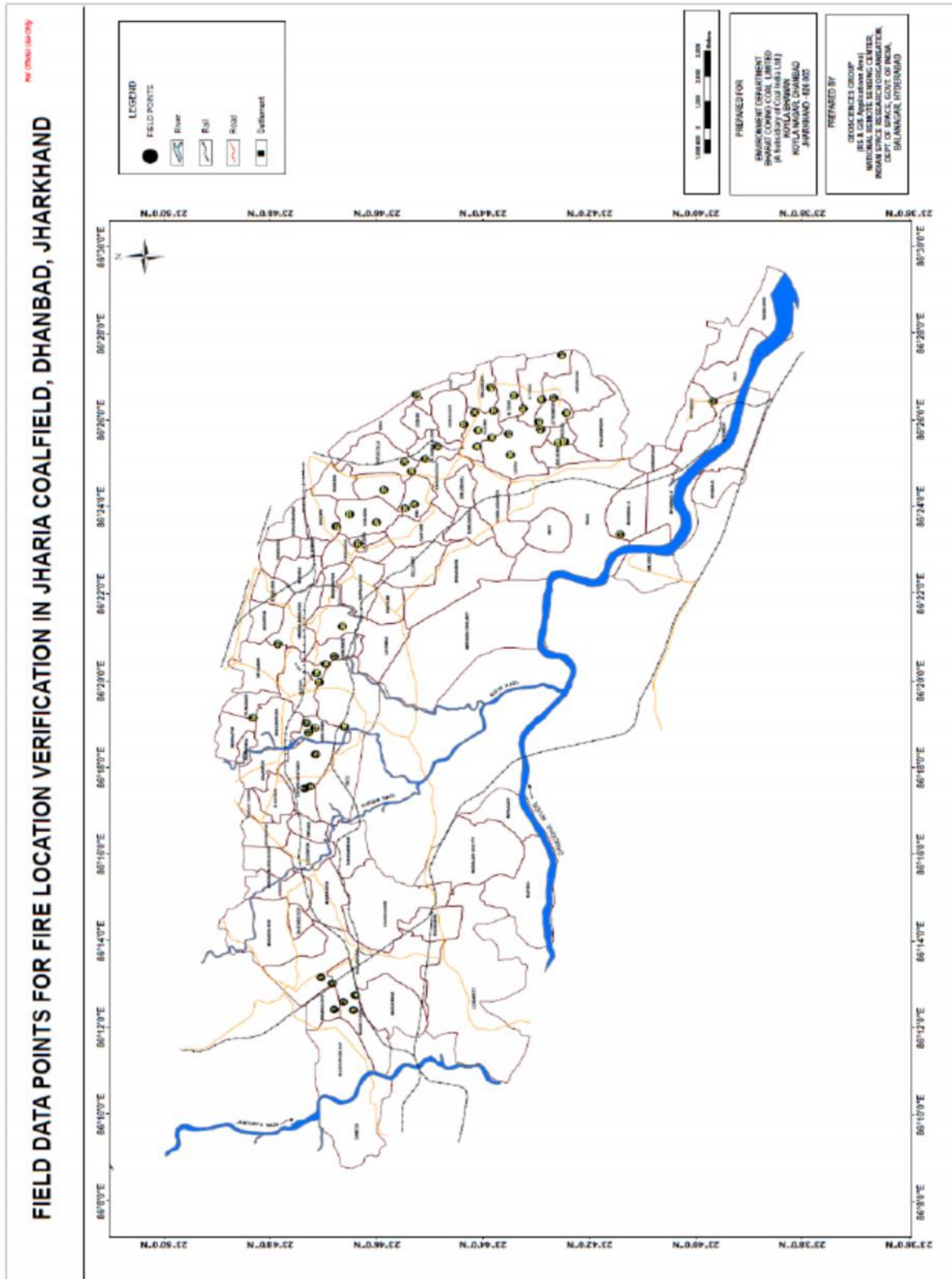
As per specific condition no xiii. The proponent shall prepare time -series maps of the Jharia Coalfields through NRSA to monitor and prevent fire problems in the Jharia Coalfields by Isothermal mapping /imaging and monitoring temperatures of the coal seams.

DELINEATION OF SURFACE COAL FIRE AND LAND SUBSIDENCE IN THE JHARIA COALFIELD, DHANBAD, JHARKHAND FROM REMOTE SENSING DATA

**GEOSCIENCES GROUP
REMOTE SENSING APPLICATIONS AREA
NATIONAL REMOTE SENSING CENTRE
INDIAN SPACE RESEARCH ORGANISATION
DEPT. OF SPACE, GOVT. OF INDIA
HYDERABAD-500 037**



JANUARY, 2018



Annexure –III

SL. NO.	COLLIERY AREA NAME	FIRE AREA 2012 (SQ. KM.)	FIRE AREA 2017 (SQ. KM.)	AREA CHANGE (SQ. KM.)	Increase/Decrease
1	DAMODA	0.0000	0.0000	0.000	NO FIRE
2	TISCO (west)	0.0000	0.0000	0.000	NO FIRE
3	IISCO	0.0000	0.0000	0.000	NO FIRE
4	TISCO (north)	0.0885	0.0153	-0.073	DECREASE
5	NUDKHURKEE OCP	0.0000	0.0000	0.000	NO FIRE
6	BENEDIH OCP	0.0530	0.0453	-0.008	DECREASE
7	BLOCK-II OCP	0.0530	0.1353	0.082	INCREASE
8	MURAIH OCP	0.1478	0.0022	-0.146	DECREASE
9	SHATABDI OCP	0.0378	0.0361	-0.002	DECREASE
10	TETURIA	0.0000	0.0000	0.000	NO FIRE
11	S.GOVINDPUR	0.0000	0.0000	0.000	NO FIRE
12	KORIDH BLOCK-IV OCP	0.0000	0.0000	0.000	NO FIRE
13	JOGIDH	0.0000	0.0000	0.000	NO FIRE
14	DHARAMABAND	0.0000	0.0000	0.000	NO FIRE
15	MAHESHPUR	0.0000	0.0000	0.000	NO FIRE
16	PHULARITAND	0.0133	0.0205	0.007	INCREASE
17	MADHUBAND	0.0000	0.0000	0.000	NO FIRE
18	AKASH KINARI	0.0000	0.0000	0.000	NO FIRE
19	GOVINDPUR	0.0000	0.0000	0.000	NO FIRE
20	E. KATRAS	0.0133	0.0000	-0.013	DECREASE
21	KATRAS-CHOITUDH	0.1021	0.1368	0.035	INCREASE
22	KESHALPUR	0.0000	0.0013	0.001	INCREASE
23	RAMKANALI	0.0000	0.0000	0.000	NO FIRE
24	NICHITPUR	0.0000	0.0000	0.000	NO FIRE
25	E. BASURIA	0.0000	0.0000	0.000	NO FIRE
26	KHAS KUSUNDA	0.0000	0.0000	0.000	NO FIRE
27	GONDUDH	0.0000	0.0000	0.000	NO FIRE
28	W. GODHAR	0.0012	0.0000	-0.001	DECREASE
29	BASURIA	0.0000	0.0000	0.000	NO FIRE
30	TETULMARI	0.0223	0.0220	0.000	DECREASE
31	DHANSAR	0.0000	0.0000	0.000	NO FIRE
32	GODHAR	0.1073	0.0000	-0.107	DECREASE
33	INDUSTRY	0.0119	0.0513	0.039	INCREASE
34	KUSUNDA	0.4243	0.7398	0.315	INCREASE
35	SENDRA-BANSJORA	0.0796	0.0275	-0.052	DECREASE
36	BASTACOLLA	0.0663	0.0810	0.015	INCREASE
37	BERA	0.0000	0.0000	0.000	NO FIRE
38	KUYA	0.0000	0.0000	0.000	NO FIRE
39	GOLUCKDH	0.0301	0.1122	0.082	INCREASE
40	KUJAMA	0.0398	0.2404	0.201	INCREASE

NRSC/RSAA/GSG/BCCL/Project Report/JAN2018

41	S. JHARIA-R. OCP	0.0244	0.1118	0.087	INCREASE
42	DOBARI	0.0000	0.0000	0.000	NO FIRE
43	GONHOODIH	0.0398	0.0322	-0.008	DECREASE
44	SIMLABAHAL	0.0000	0.0000	0.000	NO FIRE
45	HURRILADIH&STD	0.0000	0.0000	0.000	NO FIRE
46	ENA	0.0918	0.0432	-0.049	DECREASE
47	BURRAGARH	0.0000	0.0000	0.000	NO FIRE
48	N. TISRA	0.0098	0.1802	0.170	INCREASE
49	LODNA	0.0000	0.3527	0.353	INCREASE
50	S. TISRA	0.0000	0.1015	0.102	INCREASE
51	BARAREE	0.1037	0.1074	0.004	INCREASE
52	AMLABAD	0.0000	0.0000	0.000	NO FIRE
53	PATHERDIH	0.0000	0.0000	0.000	NO FIRE
54	SUDAMDIH	0.0000	0.0000	0.000	NO FIRE
55	SITANALA	0.0000	0.0000	0.000	NO FIRE
56	MURULIDIH 20/21 PIT	0.0000	0.0000	0.000	NO FIRE
57	MURULIDIH	0.0000	0.0000	0.000	NO FIRE
58	BHATDIH	0.0000	0.0000	0.000	NO FIRE
59	LOHAPATY	0.0000	0.0000	0.000	NO FIRE
60	IISCO	0.0000	0.0000	0.000	NO FIRE
61	TASRA-IISCO	0.0000	0.0000	0.000	NO FIRE
62	KENDUADIH	0.0610	0.0000	-0.061	DECREASE
63	BULLIHARY	0.0000	0.0000	0.000	NO FIRE
64	GOPALICHUCK	0.0000	0.0000	0.000	NO FIRE
65	POOTKEE	0.0000	0.0000	0.000	NO FIRE
66	BHURUNGIA	0.0000	0.0000	0.000	NO FIRE
67	KHARKHAREE	0.0000	0.0000	0.000	NO FIRE
68	GASLITAND	0.1194	0.1215	0.002	INCREASE
69	KANKANEE	0.0530	0.0525	-0.001	DECREASE
70	MUDIDIH	0.1141	0.1104	-0.004	DECREASE
71	W. MUDIDIH	0.0171	0.0000	-0.017	DECREASE
72	LOYABAD	0.0133	0.0063	-0.007	DECREASE
73	BHAGABAND	0.0000	0.0000	0.000	NO FIRE
74	MOONIDIH PROJECT	0.0000	0.0000	0.000	NO FIRE
75	E.BHUGGATDIH	0.0022	0.0214	0.019	INCREASE
76	ALKUSHA	0.0326	0.0294	-0.003	DECREASE
77	KUSTORE	0.0524	0.0463	-0.006	DECREASE
78	ANGARAPATRA	0.1331	0.0149	-0.118	DECREASE
79	SALANPUR	0.0000	0.0000	0.000	NO FIRE
80	BHOWRAH. N	0.0133	0.0980	0.085	INCREASE
81	BHOWRAH. S	0.0000	0.0000	0.000	NO FIRE
82	BAGDIGI	0.0000	0.0209	0.021	INCREASE
83	JEALGORA	0.0000	0.0067	0.007	INCREASE
84	JEENAGORA	0.0000	0.0470	0.047	NO FIRE

85	JOYRAMPUR	0.0099	0.1042	0.094	INCREASE
86	CHANDAN OCP	0.0000	0.0000	0.000	NO FIRE
87	BANSDEOPUR	0.0000	0.0000	0.000	NO FIRE
TOTAL AREA		2.18	3.28	1.10	INCREASE

Table 6: Colliery wise break-up of change in fire area from 2012 to 2017

Note:

- 1) "NO FIRE" implicates that the fire has not been identified satellite data (*either absent or below sensor resolution*)
- 2) "INCREASE" implies, increase in fire area OR emergence of fire areas not identified in 2012 study.
- 3) "DECREASE" implies, decrease in fire area OR fire areas of 2012, which are not identified in present study (*either absent or below sensor resolution*).
- 4) Estimations of fire extent (in terms of sq.km.) both 2012 and in present 2017 study are pixel based. They do not represent the actual ground area under fire. These estimations are made for comparative purpose only, to indicate the increase or decrease of areal disposition of fire. Hence, they should not be quoted as fire area on the ground.

Note: Estimations of fire extent (in terms of sq.km.) both in 2012 and in the present 2017 study are pixel based. They do not represent the actual ground area under fire. These estimations are made for comparative purpose only, to indicate the increase or decrease of areal disposition of fire. Hence, they should not be quoted as fire area on the ground.

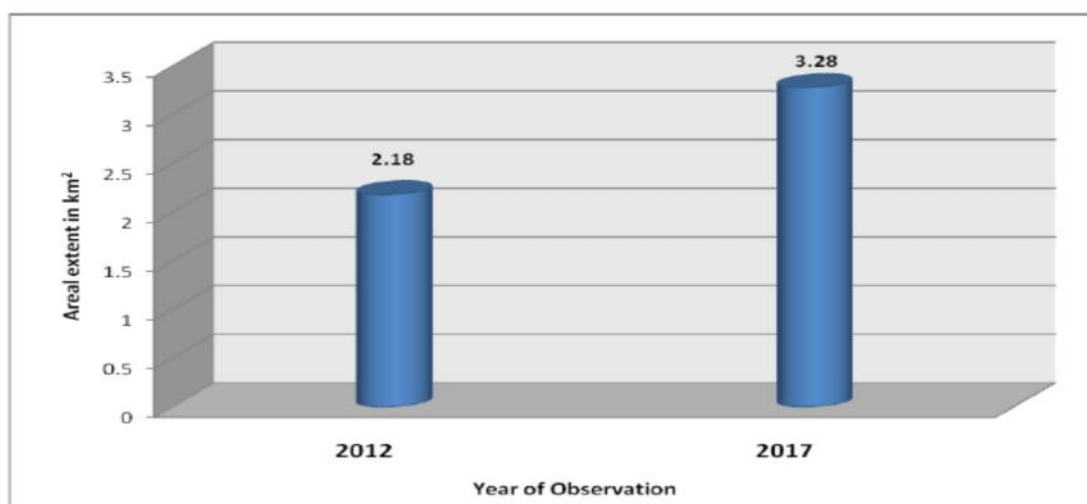


Figure 12: Total fire area statistics

ANNEXURE –III

CSR, R&R and Transportation Plan of Cluster XI

**As per EC Condition
(Specific Condition No XVIII)**

Details of transportation, CSR, R&R and implementation of environmental
action plan for each of the 17 clusters
should be brought out in a booklet form



Bharat Coking Coal Limited
(A Mini Ratna Company)
P.B Area
Dhanbad

UNDERSTANDING THE SCOPE OF CSR INTERVENTION
(BASELINE STUDY REPORT)



FOR
BHARAT COKING COAL LTD. (BCCL)
DHANBAD

BY-
NATIONAL CORPORATE SOCIAL RESPONSIBILITY HUB
TISS, MUMBAI

25th NOVEMBER 2013

CIL'S POLICY FOR CORPORATE SOCIAL RESPONSIBILITY (CSR)

Introduction

Mining of coal has profound impact on the people living in and around the areas where the mines are established. The obvious impact of the introduction of any production activity in such areas change the traditional lifestyle of the original inhabitants and indigenous communities and also change the socio-economic profile of the Area. Hence, the primary beneficiaries of CSR for the company are:

- Land oustees
- PAPs and
- Those staying within the radius of 25 Kms of the Project.

Poor and needy section of the society living in different parts of India are the second beneficiaries. In the aforesaid backdrop, policy on Corporate Social Responsibility of CIL has been framed after incorporating the features of the Companies Act 2013 and as per notification issued by Ministry of Corporate Affairs, Govt. of India on 27.02.2014 as well as DPEs guidelines and broadly covers the following: -

- a) Welfare measures for the community at large, so as to ensure the poorer section of the Society derived the maximum benefits.
- b) Contribution to the society at large by way of social and cultural development, imparting education, training and social awareness especially with regard to the economically backward class for their development and generation of income to avoid any liability of employment.
- c) Protection and safeguard of environment and maintaining ecological balance.

Objectives

The main objective of CSR policy is to lay down guidelines for the coal companies to make CSR a key business process for sustainable development for the society. It aims at supplementing the role of the Govt. in enhancing welfare measures of the society based on the immediate and long term social and environmental consequences of their activities. CIL will act as a good Corporate Citizen, subscribing to the principles of Global Compact for implementation.

Areas Covered under CSR

- The poor and needy Section of the Society living in different parts of India are covered.
- The CSR Programme also covers the existing components of Special Component Plan (SCP) and Tribal Sub Plan (TSP) for development of the SC and ST population besides development components for the entire population.

80% of the budgeted amount is spent within the radius of 25 Km of the Project Site/Mines/Area HQ/Company HQ and 20% of the budget is spent within the State.

Allocation of Fund

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

Scope

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

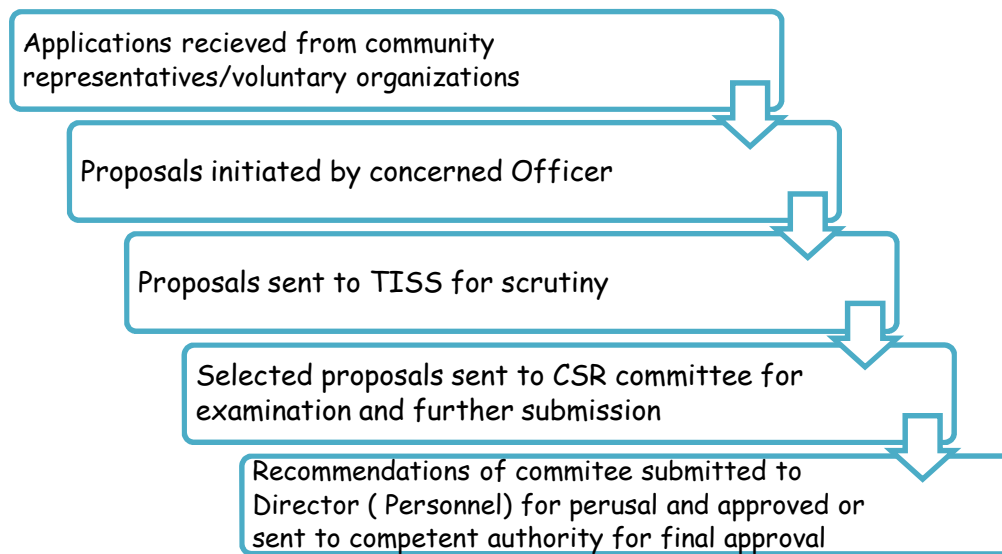
- i) Eradicating hunger, poverty and malnutrition, promoting healthcare including preventive health care and sanitation and making available safe drinking water.
- ii) Promoting education, including special education and employment enhancing vocation skills especially among children, women, elderly,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

x) Rural development projects

Implementation

- The investment in CSR is project based and for every project time framed periodic mile stones should be finalized at the outset.
- Project activities identified under CSR are implemented by Specialized Agencies. Specialized Agencies are made to work singly or in tandem with other agencies. Specialized agencies that are included presently for implementation of CSR projects in Cluster VII are through Contracted agencies for civil works.

Institutional Arrangement



KENDUAHDIH

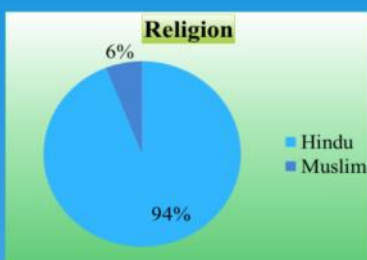
Tola: Kenduahdih (Ward 12) | Panchayat: Kenduahdih | Block: Dhanbad | District: Dhanbad

Census Year	2001
Households	150
Population	1300

Source of water	
Irrigation	None
Drinking Purpose	Tank, Public and private tap

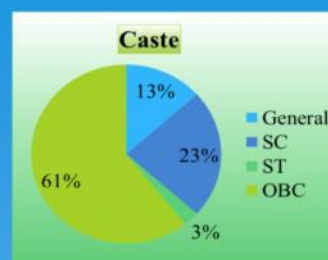
Crop Grown
Paddy
Maize
Wheat
vegetables

Recreation / Common Facilities
Playground
Samaaj Mandir
Cremation Place, community hall



Migration Pattern	
Location	Status
Outside State (Agri Labour)	Few

Accessibility to Forest/Mining Produce
Coal Collection, Firewood
Cultivation



Sources of Livelihood
Own farm activities
Agricultural labour
Non-agri labour (rural)
Salaried employment
Petty business/trade
Collect & sale forest/mining products, factory labor
Rent/pension/remittance

Common Transport Facilities
Motor Cycle
Bicycle

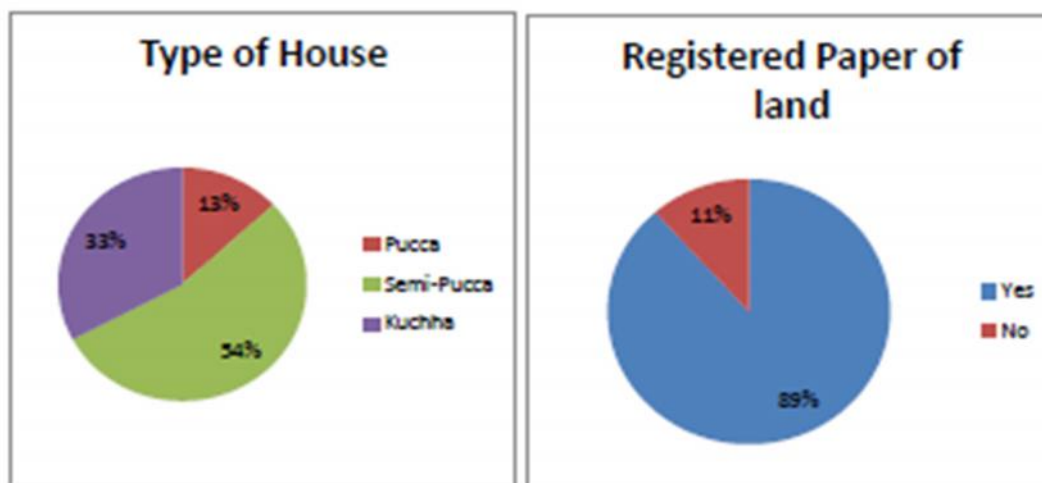
Facilities Located in Villages
Cemented tar road
PDS Shop
Grocery Shop
Pre-Pri/Nursery School
Govt Primary School
Pvt. Primary School
Govt Secondary School
Higher Sec School
Pvt Clinic (RMP+)
Asha worker
Dai

Facilities Located More Than 5 Kms
Weekly Market
Block Development Office (Dhanbad)
District Headquarters (Dhanbad)
Warehouse (Dhanbad)
APMC/Mandi (Dhanbad)
ITI/Polytechnic(Dhanbad)
Health Sub – Centre (Karkend Mor)
Primary Health Centre(Dhanbad)
Veterinary Clinic(Karkend Mor)

Facilities Located Within 5 Kms
Bus Stop (Putki)
Daily Evening Market (Boragarh)
DTP/Xerox (Bhagabandh)
Post Office (Bhagabandh)
Railway Station (Bhagabandh)
Police Station (Putki)
Gram Panchayat Office (South Balihari)
Cooperative Society (Putki)
Bank for S/B account (Bhagabandh)
Degree College(Jharia)
CHC Govt /Gen Hospital (Bhagabandh)
Private Hospital (Bhagabandh)
Medical Shop/Chemist (Bhagabandh)

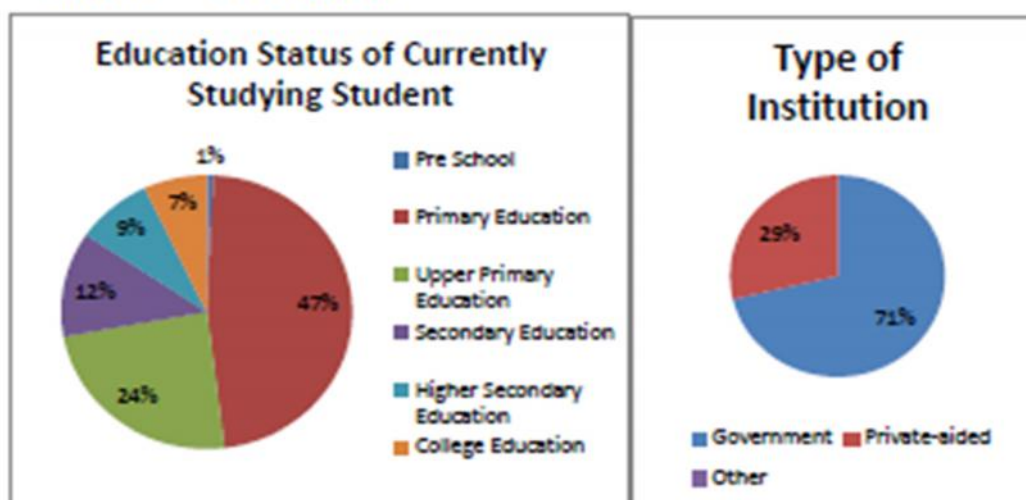
HOUSEHOLD STATUS

4.10.1.1 HOUSEHOLD STATUS



In Kenduahdih Basti, 40% of the households are found to be Semi- Pucca while 48% are Kuchha and 12% are Pucca. 95% of the houses are registered while only 5% was found to be non-registered. Nearly 85% of the houses in this village are electrified.

4.10.1.2 EDUCATION



In Kenduahdih Basti, it has been found that 35% of the students are enrolled in Primary education followed by 28% in Upper primary, 10% in secondary education, and 5% in higher secondary, 3% in college. Education after 12th standard is found comparatively less with any

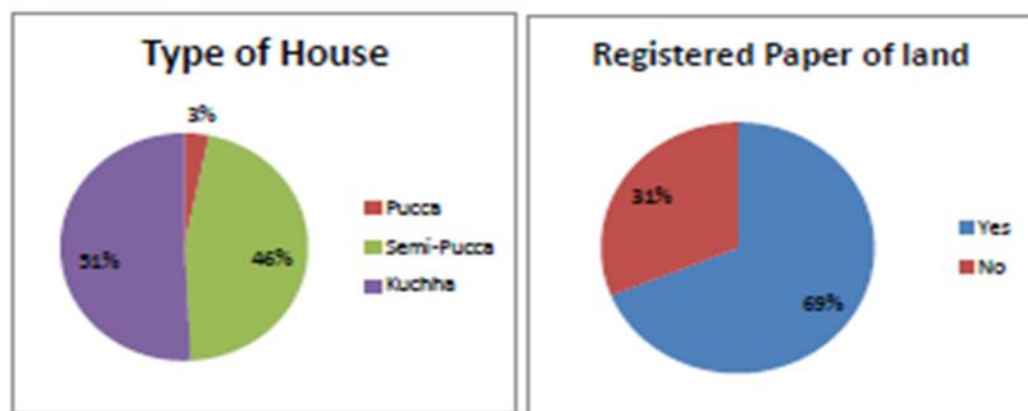
Major Problems and Recommendations

AREA	MAJOR PROBLEMS AND RECOMMENDATIONS
Education	There is no road which can join schools to main working road
	No electricity and in-house circuiting of lights and fans in the class room of primary school
	Shakti Nath Mehto School needs school boundary and toilet in school premises
Water Supply	Pipeline already exists in this village. More number of pipelines are required in Harijan Basti of Kenduahdih
Health Care	Mobile medical Van should treat children every month in primary school
	Maternity health camp should be initiated through MMV
Social Empowerment	Nearly 5-6 SHG has been identified in this village. SHG (<i>Ma Saraswati Mahila Samuh</i>) already exist in the village. They need are trained in agriculture. They need support of land to start collective farming of horticultural crops. They are also trained in preparation <i>Agarbatti</i> and bangles made from lac.
	Vocational training school for girls and boys is needed in this village. School building of Shakti Nath Mehto School can be used for providing vocational training center in the weekends or after the school hours with prior permission of the school administration. Not only that the training center for women to start small enterprise can be establish in the same school premises.
Sanitation	No toilets in any of the households. Toilets is needed to construct
Infrastructural Development	There <i>Kuccha</i> road in the village which creates problem during rainy season
	On hand pump/tap point is needed in ICDC
	One kitchen room is required in primary school
	Playground boundary is needed with gate in primary school

4.10.2 BHAGABANDH

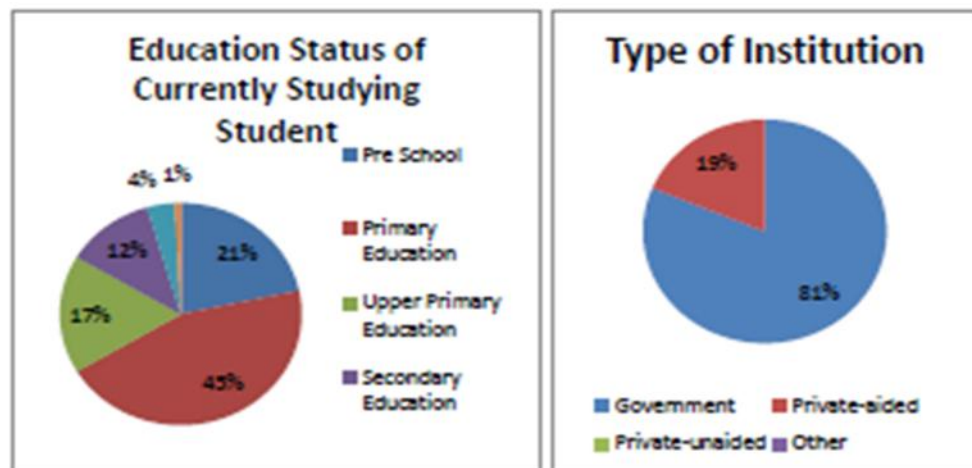


4.10.2.1 HOUSEHOLD STATUS



In Bhagabandh Village, 3% of the sample is living in pucca house and 51% were having kuchha house while 46% were having semi -pucca house. Among the sample 69% of the people have registered paper of land while 31% of them do not have registered paper of land. 94% of the sample is living in electrified.

4.10.2.2 EDUCATION



In Bhagabandh Village, status of education does not seem positive as far as college education is considered, only 1% of the children among sample households are found at the time of data collection enrolled in higher education. Among the students of sample households who are currently studying, 45% are currently studying in primary school, 17% are in upper primary school, 12% in secondary school and another 4% is studying in

Major Problems and Recommendations

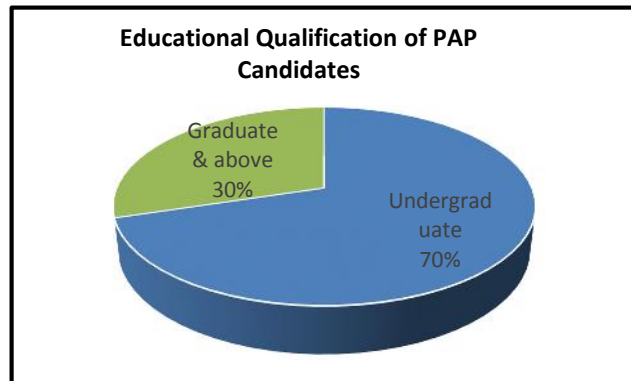
AREA	MAJOR PROBLEMS AND RECOMMENDATIONS
Education	There should scholarship for the children belongin to underprivileged section of the society who is going for education after matriculation to schools of Dhanbad by BCCL
	Library is required in this village
	Evening school has been requested by the people
Water Supply	More number of tap points are required in Manjhi Tola of Bhagabandh Basti
Health Care	Maternity health compa
	Regular check-up of primary school children
Rural Electrification	School should have in-house electric fitting of fans and light
Sports & Culture	Sports equipment should be provided to the sports club
Sanitation	No toilets in houses.
	There should be provision for garbage disposal By BCCL at regular interval along with fumigation
	Ponds should be cleaned with involving community by providing them daily wage as followed in MNREGS
Social Empowerment	SHG for women and men should be formed to start Income Generation activity
	Group activity on Piggery and poultry has been requested by the people. But for that a formal group has to be formed who have to register in the local bank
	Women who are not getting widow pension should be supported with livestock's like poultry, duckery and goatry
Infrastructural Development	Playground for children with boundary
	Repair of damage road should be done so that medical vans or ambulance should reach at the door step for pregnant women
	Playground with boundary should be constructed
	There is requirement of High school covering students from nearby villages like Bhagabandh. It can be done constructing additional school building in government secondary school in the village itself

CSR Activities (October' 2018 to March' 2019)

1. Skill Development Training of Project Affected People (PAPs)

CSR department of BCCL in collaboration with the Central Institute of Plastics Engineering and Technology (CIPET), a Government of India Institute, has conducted counselling for PAP candidates for 1st Batch. Selected candidates are getting free residential, technical skill development training at the CIPET campus in Hajipur, Bihar. This endeavor, aimed at benefitting the unemployed PAPs belonging to economically backward sections in peripheral project areas of BCCL.

Total 47 candidates (37 Male and 10 Female) filled their application from P.B Area in 1st Batch. 70 % of the candidates are Undergraduate and 30 % are Graduate with few candidates having technical degrees in ITI. The project is aimed at equipping the skill sets in young people who are the major driving force for economic development and technology innovation and to impart job oriented skill development training to the underprivileged/



unemployed PAPs for developing technical and professional skills thereby enhancing the employability of underprivileged/ unemployed youth through skill development in Plastic Engineering and Technology. After successful completion of 6 months residential training, candidates can take part in job placement/interview organized by CIPET. Companies which are working in the field of Plastic Engineering and Technology will be called for placement process.



2. “BCCL Ke Lal and BCCL Ki Ladli” Scheme Batch 2019-21:

Bharat Coking Coal Limited (BCCL) under its CSR Programme started “BCCL Ke Lal and BCCL Ki Ladli” scheme to provide free educational support to under-privileged meritorious students of PAPs (Project Affected Persons), and people residing in the command area of BCCL or son/daughter of BCCL wage board Employee. These students particularly belong to poor and weaker section of the society and BCCL’s objective is to provide them free school education, coaching from experts to prepare them to appear in admission in Engineering colleges like IITs, NITs and other prestigious colleges of the country.

a. Eligibility Criteria

A Screening Test (Multiple Choice Questions based) is conducted for selection of students. The final merit list is published only for those candidates who have secured at least 60% aggregate (for CBSE, ICSE, JAC and Other Board) in Class 10th Board Examinations. The Gross Annual income of the Parents/ Guardians of the candidates should preferably be less than Rs. 6,00,000 (Rupees Six Lakhs Only). The candidates shall be required to submit the income certificate at the time of admission.

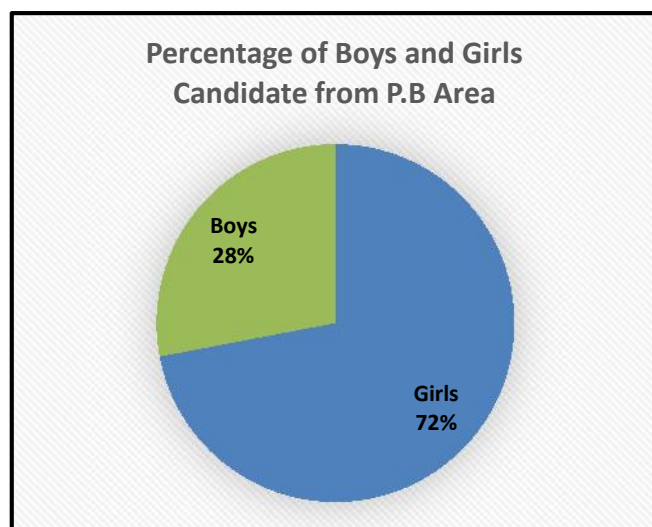
3. Details of Study Centres:

Four Coaching Centers were set-up wherein classes are conducted through Video Conferencing. Each centre has maximum 50 Students seat each (200 Students in all). 10 seats are reserved for Female Students at each VC Centre. These centers are established at:

- a.** Kalyan Bhawan, Jagjiwan Nagar (Dhanbad District)
- b.** Lodna Area (Dhanbad District)
- c.** Katras Area (Dhanbad District)
- d.** Block II Area (Dhanbad District)

4. Profile of Candidates who submitted applications from P.B Area:

Based on eligibility criteria for “BCCL Ke Lal and BCCL Ki Ladli” scheme, applications were invited from students who were appearing or appeared in Class 10th Board Exam in 2019. Total 25 students submitted their application form at P.B Area office and 27 application from W.J.Area. There is an increase in percentage of Girl applicants from last year as in last year the percentage of girl applicant was 59% out of total applicant but this year the percentage of girl applicant increased to 72% out of total applicant. Entrance Test was conducted on 20th April, 2019 at DAV Public School Koyla nagar, Dhanbad by BCCL.



The final merit list for entrance test 2019 will be published only for those candidates who have secured at least 60% aggregate (for any Board) in Class 10th Board Examinations. All students of VC Centres will be provided the facility of Smart Class for coaching at 4 Centres of BCCL (Barora, Katras, Lodna and HRD, Jagjiwan Nagar, Dhanbad) with online Video & Audio interactive session facility with two such set up at each centre for class 11th & 12th separately.

5. Details of the “BCCL Ke Lal and BCCL Ki Ladli” Batch 2017-19 Scheme till now is as under:

Based on Based on eligibility criteria for “BCCL Ke Lal and BCCL Ki Ladli” scheme, applications were invited from students who were appeared in Class 10th Board Exam in 2017. Total 116 students submitted their application form at P.B Area office. These students were appeared in Entrance Test conducted by BCCL under “BCCL Ke Lal and BCCL Ki Ladli” scheme. Among 116 students, 18 students got selected for admission in VC Centre. Regular PTA (Parent Teacher Association Meeting) with students for interaction and review of student’s performance and analysis of needs of the parents are organized at regular intervals. Regular Doubt Clearing Classes along with regular tests are conducted for continuous improvement of the students.



VC Center Kalyan Bhawan, Jagjiwan Nagar



Area VC Center

- 1. Rehabilitation & Resettlement during October, 2018 to March, 2019: Nil**
- 2. Civil work carried out under CSR during October, 2018 to March, 2019: Nil**
- 3. Medical Camps/Health Awareness camp organized during October, 2018 to March, 2019:**

Name of Camp	Month	Total No. of Beneficiaries
BMD Camp	26.9.18 to 25.10.18	40
Sugar Camp	26.10.18 to 25.11.18	20
BP Sugar Monitoring Camp	26.11.18 to 25.12.18	30
BMD Camp	26.12.18 to 25.1.19	40
Calcium and Sugar Camp	26.1.19 to 25.2.19	40

BMD Camp	26.2.19 to 25.3.19	25
----------	--------------------	----

4. No. of Beneficiaries counseled/ treated at CSR Clinic:

Dispensary	Duration					
	26.09.2018 to 25.10.2018	26.10.2018 to 25.11.2018	26.11.2018 to 25.12.2018	26.12.2018 to 25.01.2019	26.01.2019 to 25.02.2019	26.02.2019 to 25.03.2019
P.B Project Dispensary	29	32	24	19	16	21
Huriladih Dispensary	07	10	12	8	11	13
Burragarh Dispensary	21	15	19	17	21	23
Putki Dispensary	12	13	17	11	8	14
Bhagabandh Dispensary	81	57	40	33	29	27
KB 10/12 Pit Dispensary	10	14	9	17	13	19
Gopalichack Dispensary	15	18	21	14	13	19
Total	174	159	142	119	111	136

Transportation Plan

The transportation plan for cluster XI for the financial year 2018-19 is shown below:

Sl. No.	Mine	Existing siding	Other Transport Sites	Existing Transport distance (in KM)	Avg. Capacity of Dumper (T)
1.	P.B. Project	Burragarh		7	15
			Jamadoba Washery	9	15
			Moonidih washery	4.75	15
			Mahuda washery	10	15
2.	Gopalichuck	Burragarh		5.9	15
			Moonidih	6.6	15
3.	Bhagabandh	Burragarh		1-2	18
			Moonidih	4-5	18
4.	KB 10-12	Burragarh		3-4	18

Details of CSR activity by Moonidih Hospital from October'2018 to
March'2019

Sl. No.	Name of CSR Activity	No. of Beneficiary	Place
01	CSR clinic	4543	Hospital
02	Wellness clinic	717	Hospital
03	Bande Mataram	98	Hospital

25/10/2018 – Hypertension Awareness at CISF camp – Nos. of
Beneficiary – 54

29/11/2018 – Mega Medical Health camp at Hospital- Nos. of
Beneficiary – 401

ANNEXURE-IV
COMPLIANCE OF DHANBAD ACTION PLAN

(1) Covering of loaded transport vehicles

It has been complied. The clause of covering of loaded coal transport vehicle has also been incorporated in the transport agreement/ contract.

(2) Coal transport roads shall be made pucca

Mine	Proposed pucca road in Mtrs	Work Completed in Mtrs	Proposal processed/approved	Likely date of completion
P.B. project	150			Owing to the restriction due to implementation of Govt. of India approved Master Plan and The Jharkhand State Restriction on construction in unsafe areas, Act 2002. BCCL is in the process of constructing 5.10 km WBM Roads.

(3) All drillings to be done with dust containment and suppression systems. Sprinklers will be installed including at all coal stock & sidings

Complied. Water sprinkling at all coal stock and sidings is being done by mobile water tankers and through pipe lines. Proposal for installation of fixed sprinklers at siding is under process.

(4) Mobile Sprinklers

Sl. no.	Mine/Workshop	No. of Fixed Sprinklers	No. of Mobile Sprinklers	Total Capacity(KL)	Trips per day
1	Bhagabandh UG Mine	1 (Near Coal Unloading Site)	0	N.A	N.A
2	P.B. project Colliery UG Mine	Nil	1	40	2
3	Central Auto Workshop	Nil	1	8	2
4	Kendwadih Workshop	Nil	1	45	2

(5) The direction of surface run-off of the premises of collieries shall be diverted to created water bodies.

Creation of water bodies in coal bearing area will pose safety threats to nearby mine and it will be violation of mines act. This will also create grave danger of inundation of the adjacent mines since the mines are 100 years old and interconnected with each other. However, artificial ponds have been created where, there are no chances of future coal extraction.

(6) Dealing of mine fires

A Master plan for Dealing with fires and subsidence and rehabilitation in the Leasehold of BCCL has been approved by Govt. of India vide letter no- 22020/1/2005-CRC dated 12 08 09. In fire patch of V/VI/VII/VIII

seam of Gareria Secn. At East Bassuriya about 1, 70,000 cu. m. mitti and non-combustible material has been filled, rest will be filled by quarry OB.

(7) The waste water shall be passed through oil separator-cum-filtration system

Complied. 1 number of Oil Separator has been constructed at P.B. Project Colliery.

(8) The removed OBs shall be utilized for low land filling or for making roads

N.A

(9) Tree plantation on the dumps

Complied. Ecological park is under construction in lease hold of Bhagabandh. 5 Ha site was taken up in FY 2015-16 and 2 Ha in FY 2016-17.

4000 saplings planted from April'18 till date.

Approximately 1500 Saplings have been planted starting from April'17 till September'17 (2017-18). Apart from that 500 saplings were distributed to collieries, nearby schools, etc.

Around 2500 saplings are planted at ecological park sites and collieries (till September'18).

Around 2500 Gabion Plantation is under process via Forest Deptt., Dhanbad (from October'18 till date).

(10) All hazardous wastes shall be disposed off

Complied.

- a. All working units have applied for authorization as per Hazardous Wastes (Management, Handling and Trans boundary Movement) Rules.
- b. Burnt/used oil is disposed of as per rule.
- c. Disposal of Hazardous waste, burnt Oil / batteries is being done through E-auctioning to authorized recycler/ re-processor having valid authorization from CPCB/ SPCB. Return are also being filed.

(11) Monitoring and Reporting six monthly

Complied. Monitoring work is being done by CMPDI, Dhanbad as per work order issued by BCCL HQ.

(12) Introduction of GIS/ GPS

CMPDI, HQ has been given the job of satellite surveillance of the Jharia coal field through NRSA Hyderabad and the information is being uploaded in the website.

ANNEXURE-V



झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद्
Jharkhand State Pollution Control Board
HIG-1, Housing Colony, Dhanbad-826001

Ph: 0326-2204933

(7)

Letter No.... 2650

Dated 6/7/13

From,

Regional Officer,
Dhanbad

To,

HOD (Envt.),
M/s. B.C.C.L.,
Koyla Bhawan, Koyla Nagar,
Dhanbad.


Sub: **Fixing up monitoring station/Sampling location of Air, Water & Noise.**

Sir,

With reference to you letter no. GM(Envt.)/F-JSPCB/2013/783, dt. 06.07.2013 We have approved Air, Water & Noise monitoring Station/Sampling location after verification and return a copy of the map.

Encl-A/a.

Your's faithfully,


6/7/13
(Dinesh Prasad Singh)
Regional Officer.

Memo.....

Dhanbad, dated.....

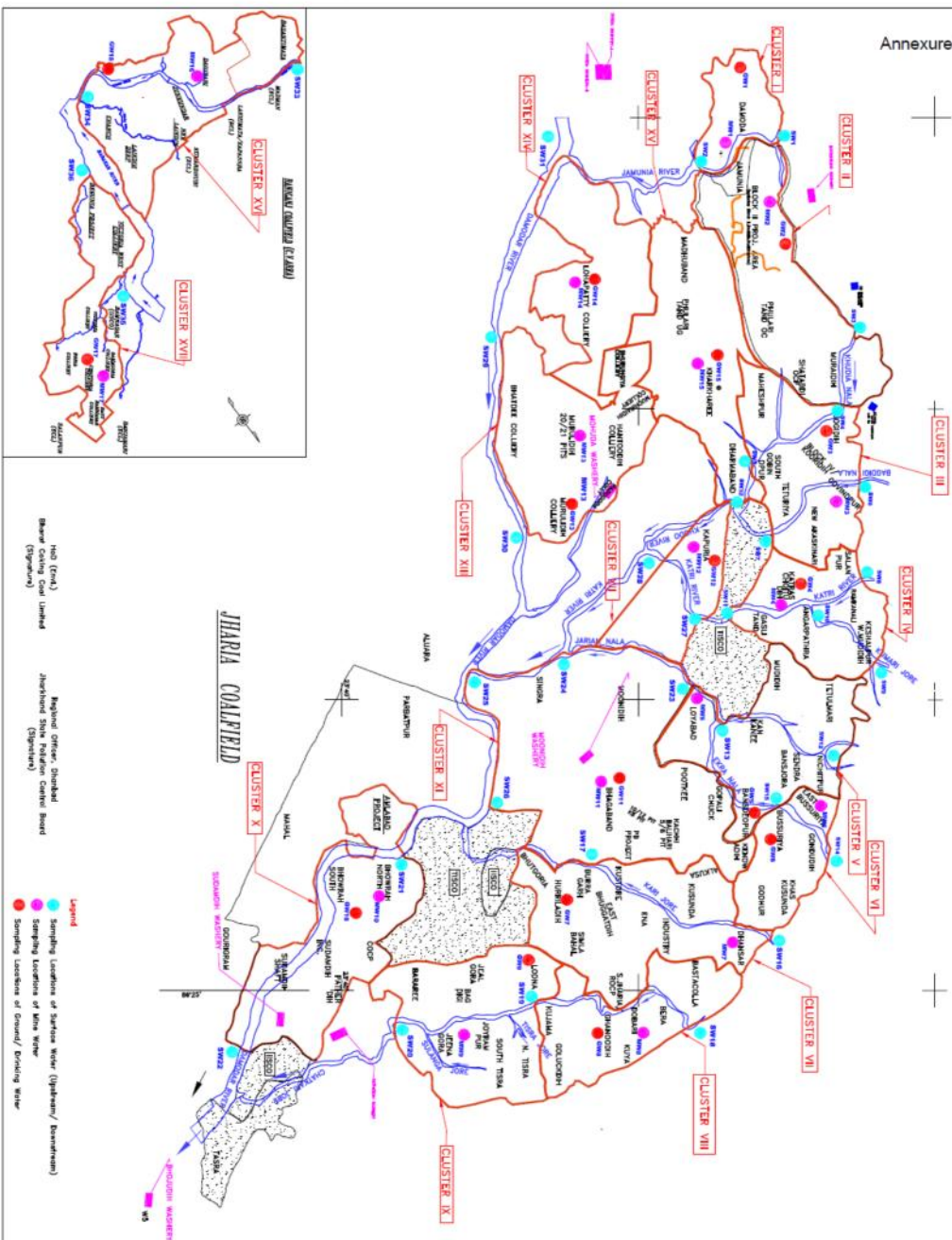
Copy to: The Member Secretary, Jharkhand State Pollution Control Board for information & enclose a copy of the map for necessary action.

Encl-A/a.

(Dinesh Pd. Singh)
Regional Officer.

Water Sampling Locations in BCCL

Annexure-03



Legend

- Sampling Locations of Surface Water (Upstream/ Downstream)
- Sampling Locations of Mine Water
- Sampling Locations of Ground/ Drilling Water

Head Office, Dhanbad
Jharkhand State Pollution Control Board
(Dhanbad)

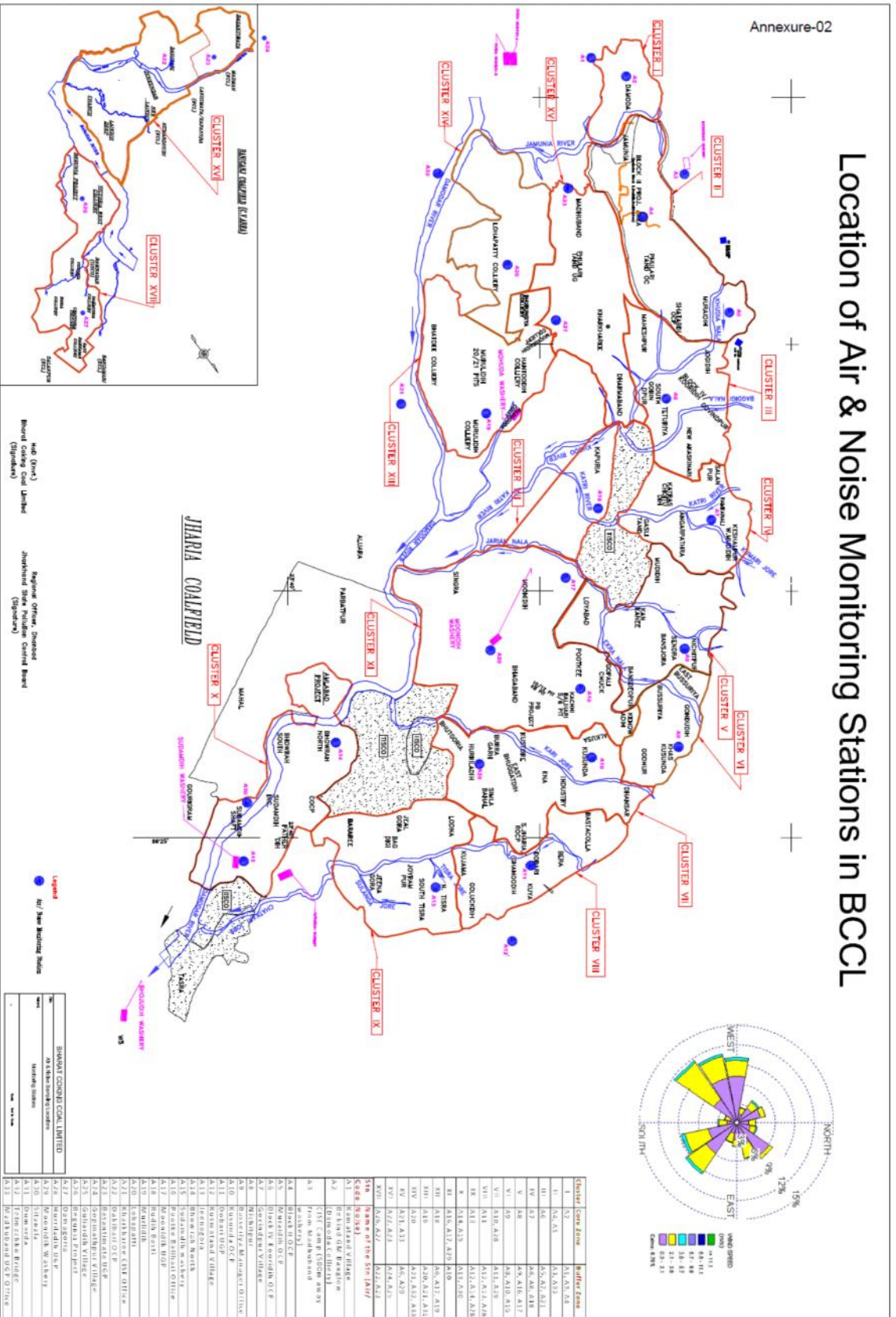
INDEX

Cluster	Water Body	Water Type	Sampling Location	Sampling Point	Sampling Frequency
I	Barua River	Surface Water	Barua River	Barua River	Quarterly
II	Barua River	Surface Water	Barua River	Barua River	Quarterly
III	Barua River	Surface Water	Barua River	Barua River	Quarterly
IV	Barua River	Surface Water	Barua River	Barua River	Quarterly
V	Barua River	Surface Water	Barua River	Barua River	Quarterly
VI	Barua River	Surface Water	Barua River	Barua River	Quarterly
VII	Barua River	Surface Water	Barua River	Barua River	Quarterly
VIII	Barua River	Surface Water	Barua River	Barua River	Quarterly
IX	Barua River	Surface Water	Barua River	Barua River	Quarterly
X	Barua River	Surface Water	Barua River	Barua River	Quarterly
XI	Barua River	Surface Water	Barua River	Barua River	Quarterly
XII	Barua River	Surface Water	Barua River	Barua River	Quarterly
XIII	Barua River	Surface Water	Barua River	Barua River	Quarterly
XIV	Barua River	Surface Water	Barua River	Barua River	Quarterly
XV	Barua River	Surface Water	Barua River	Barua River	Quarterly
XVI	Barua River	Surface Water	Barua River	Barua River	Quarterly
XVII	Barua River	Surface Water	Barua River	Barua River	Quarterly

Prepared by	BCCL
Checked by	BCCL
Approved by	BCCL
Date	10/01/2018

Location of Air & Noise Monitoring Stations in BCCL

Annexure-02



ANNEXURE- VI



Point XVI

cmpdi

A Mini Ratna Company

सेंट्रल माईन प्लानिंग एण्ड डिजाइन इंस्टीट्यूट लिमिटेड
(कोल इंडिया लिमिटेड की अनुषंगी कम्पनी / भारत सरकार की एक लोक उपक्रम)
पंजीकृत कार्यालय : गोंदवाना प्लेस , कान्के रोड , राँची - 834031 (झारखण्ड) भारत
क्षेत्रीय संस्थान-2, पत्रा. बीसीसीएल टाउनशिप, कोयला नगर, धनबाद 826005 (झारखण्ड) भारत
Central Mine Planning & Design Institute Limited
(A Subsidiary of Coal India Limited / Govt. of India Public Sector Undertaking)
Registered Office : Gondwana Place, Kanke Road, Ranchi -834031(Jharkhand)
Regional Institute-II, P.O. BCCL Township, Koylanagar, Dhanbad 826005(Jharkhand) India
Corporate Identity No. U14292JH1975GOI001223

पत्रांक: आर.आई.-2/पर्यावरण/एम-30/1150

दिनांक: 20.06.2015

सेवा में,
उप महाप्रबंधक (पर्यावरण)
बी. सी. सी. एल.
कोयला भवन
धनबाद ।



विषय: Study of installation of Rail-cum-Conveyor System in BCCL for transportation of coal.

महोदय,

This has reference to your letter no. BCCL/GM(Env.)/F-EC/13/622, dated 25.05.2013 for conducting the study and preparation of plan for installation of Rail-cum-Conveyor System for coal transportation in BCCL as a part of compliance of environmental clearance (EC) conditions stipulated by MoEF & CC in EC orders of different clusters. In this regard, we would like to inform you the following:

- As per EC clearance order transportation plan for Rail-cum-Conveyor system should dovetailed with Jharia Action Plan (Master Plan). The system of transportation is required to be installed in 2nd phase of EC implementation i.e. after completion of Master Plan (10 years) and 5 years of gestation period.
- JRDA has issued direction to RITES for traffic survey and data collection to initiate feasibility study regarding Diversion of Railway lines from fire affected and subsidence prone areas
- Coal transportation route / conveyor installation layout will be finalized after liquidation of coal mine fire, rehabilitation of 595 unstable sites, road and rail route alignment and location of Rly. Sidings of BCCL.

CMPDI will be able to submit the plan / study for installation of Rail-cum-Conveyor System in BCCL for transportation of coal only after diversions and re-alignments of roads and railway lines and relocation of railway sidings

This is for your kind information.

Sd/- Anantashu 26
for compliance purpose.

23/6/15

भवदीय
(वि. कु. सिन्हा)
क्षेत्रीय निदेशक



☎ : (+91) 0326-2230850

फैक्स / Fax : (+91) 0326-2230500

वेब साइट / Website : www.cmpdi.co.in

ईमेल / Email : ri2@cmpdi.co.in

WATER QUALITY MONITORING

3.1 Location of sampling sites

(Refer Plate No. – II)

i) Mine Discharge of Bhagabandh (MW11)

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

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-XI		Month: OCT , 2018	Name of the Station: Mine Discharge of Bhagabandh	
Sl. No.	Parameters	MW11 First Fortnight	MW11 Second Fortnight	As per MOEF General Standards for schedule VI
		10-10-2018	24-10-2018	
1	Total Suspended Solids	34	18	100 (Max)
2	pH	7.96	8.2	5.5 - 9.0
3	Oil & Grease	<2.0	<2.0	10 (Max)
4	COD	16	20	250 (Max)

All values are expressed in mg/lit except pH.

सुमन सोमैन, रुद्र

Analysed By
JSA/SA/SSA

✓

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

21/10/18

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

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WATER QUALITY DATA (EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: Cluster-XI		Month: NOV , 2018	Name of the Station: Mine Discharge of Bhagabandh	
Sl. No.	Parameters	MW11 First Fortnight 15/11/2018	MW11 Second Fortnight 29/11/2018	As per MOEF General Standards for schedule VI
1	Total Suspended Solids	26	16	100 (Max)
2	pH	8.11	7.51	5.5 - 9.0
3	Oil & Grease	<2.0	<2.0	10 (Max)
4	COD	24	16	250 (Max)

All values are expressed in mg/lit except pH.

सुमन सेठी, रुद्र

Analysed By
JSA/SA/SSA

U

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

21/11/18

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

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WATER QUALITY DATA (EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: Cluster-XI		Month: DEC , 2018	Name of the Station: Mine Discharge of Bhagabandh	
Sl. No.	Parameters	MW11 First Fortnight	MW11 Second Fortnight	As per MOEF General Standards for schedule VI
		13.12.18	28.12.18	
1	Total Suspended Solids	32	28	100 (Max)
2	pH	8.24	7.64	5.5 - 9.0
3	Oil & Grease	<2.0	<2.0	10 (Max)
4	COD	28	20	250 (Max)

All values are expressed in mg/lit except pH.

सुमन सेठी, रुद्र
Analysed By
JSA/SA/SSA

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

21/12/18
Approved By
HOD(Mining/Environment)
RI-2, CMPDI, Dhanbad

WATER QUALITY MONITORING

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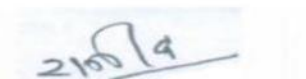
WATER QUALITY DATA (EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: Cluster-XI		Month: JAN , 2019	Name of the Station: Mine Discharge of Bhagabandh	
Sl. No.	Parameters	MW11 First Fortnight 14.01.19	MW11 Second Fortnight 23.01.19	As per MOEF General Standards for schedule VI
1	Total Suspended Solids	38	26	100 (Max)
2	pH	7.8	7.83	5.5 - 9.0
3	Oil & Grease	<2.0	<2.0	10 (Max)
4	COD	24	32	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

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WATER QUALITY DATA (EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: Cluster-XI		Month: FEB , 2019	Name of the Station: Mine Discharge of Bhagabandh	
Sl. No.	Parameters	MW11 First Fortnight	MW11 Second Fortnight	As per MOEF General Standards for schedule VI
		1ST	2ND	
1	Total Suspended Solids	16-02-2019	21-02-2019	100 (Max)
2	pH	32	20	5.5 - 9.0
3	Oil & Grease	8.23	7.81	10 (Max)
4	COD	<2.0	<2.0	250 (Max)

All values are expressed in mg/lit except pH.

सुमन सोहन, रुकु

Analysed By
JSA/SA/SSA

U

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

21/02/19

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

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WATER QUALITY DATA (EFFLUENT WATER- FOUR PARAMETERS)

Name of the Cluster: Cluster-XI		Month: MAR , 2019	Name of the Station: Mine Discharge of Bhagabandh	
Sl. No.	Parameters	MW11 First Fortnight 08.03.19	MW11 Second Fortnight 22.03.19	As per MOEF General Standards for schedule VI
1	Total Suspended Solids	26	28	100 (Max)
2	pH	7.8	7.95	5.5 - 9.0
3	Oil & Grease	<2.0	<2.0	10 (Max)
4	COD	20	24	250 (Max)

All values are expressed in mg/lit except pH.

सुमन सोनी, रुद्र

Analysed By
JSA/SA/SSA

✓

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

21/3/19

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



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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.

GROUNDWATER LEVEL & QUALITY REPORT

FOR CLUSTER OF MINES, BCCL

(Assessment year – 2018-19)

[CLUSTER – I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XIII, XIV, XV & XVI of Mines, BCCL]

JHARIA COALFIELD AND RANIGANJ COALFIELD (PART)

For

(BHARAT COKING COAL LIMITED)

(A Subsidiary of Coal India Limited)

KOYLA BHAWAN (DHANBAD)

Prepared by
Hydrogeology Department
Exploration Division
CMPDI (HQ), Ranchi

MARCH – 2019

Cluster–XI consists of eight coal mines and one coal Washery namely; Gopalichak UG Project, Kachi Balihari 10/12 Pit UG, Pootkee Balihari Project UG, Bhagaband UG, Kendwadih UG (closed), Pootkee UG (closed), Kachi Balihari 5/6 Pit UG (closed) are under the administrative control of Pootkee Balihari Area and Moonidih UG & Moonidih Washery are under the administrative control of Western Jharia Area of BCCL. This Cluster of mines is located in central part of Jharia Coalfield in Dhanbad district of Jharkhand.

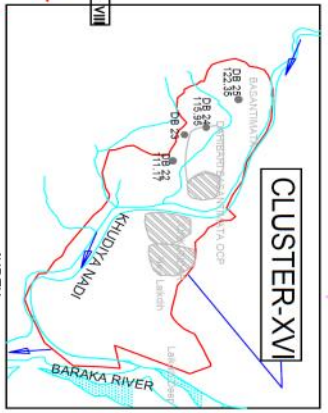
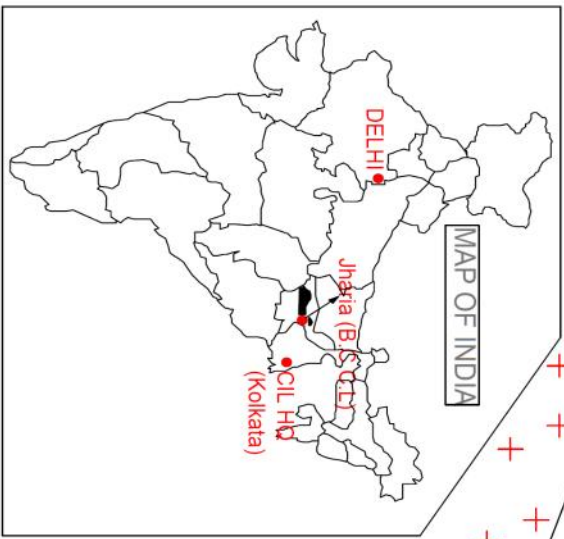
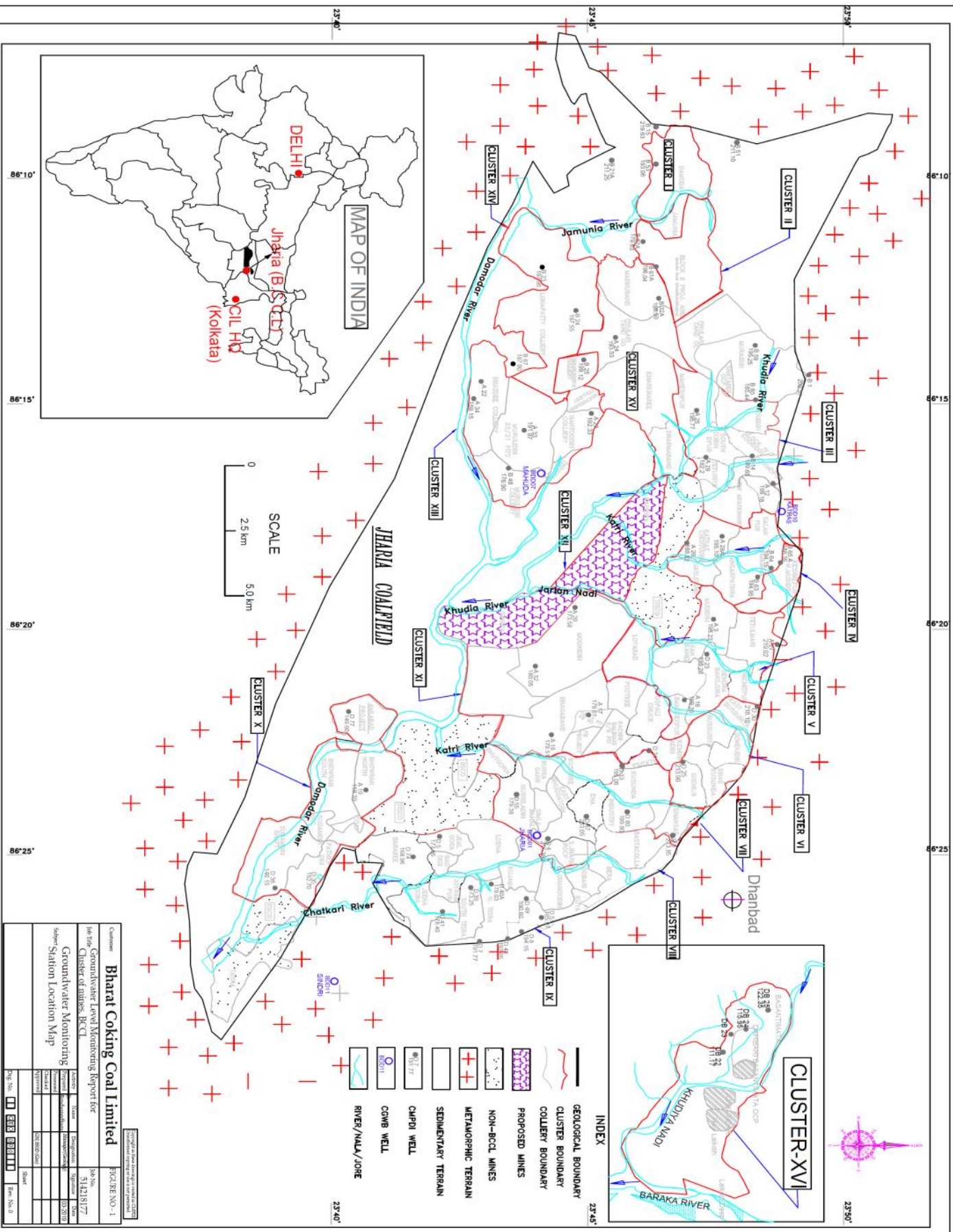
The present leasehold area of Cluster-XI is 3527.58 Ha. The area has an undulating topography with gentle slope towards south. The RL varies from 201 m to 166 m AMSL. Katri River, Jarian Nala, Ekra Jore and Kari Jore are controlling the drainage of the area. The area comes under the watershed of Katri River and Kari Jore.

5 hydrograph stations (**A-17, A-18, A-20, A-32 and D-34**) are located in the core zone of the mine area. Water level monitoring in these monitoring stations has been done in the months of February, April, August & November' 2018 and the Ground water level data is enclosed in the table below:

SI No.	Well No.	Location	Water below (bgl in meters)			
			Feb'18	Apr'18	Aug'18	Nov'18
1	A-17	Kachi Balihari	2.07	3.34	1.64	2.84
2	A-18	Bhagaband	0.89	1.24	1.34	0.99
3	A-20	Gorbudih	3.59	4.57	1.92	2.57
4	A-32	Baludih	0.60	2.80	0.45	0.70
Average GW (bgl)			2.26	3.20	1.64	2.16

Ground Water Level (in bgl) varies from 0.60 to 3.59 m during February, 1.24 to 4.57 m during April, 0.45 to 1.92 m during August and 0.70 to 2.84 m during November within the Core Zone of Cluster-XI area.

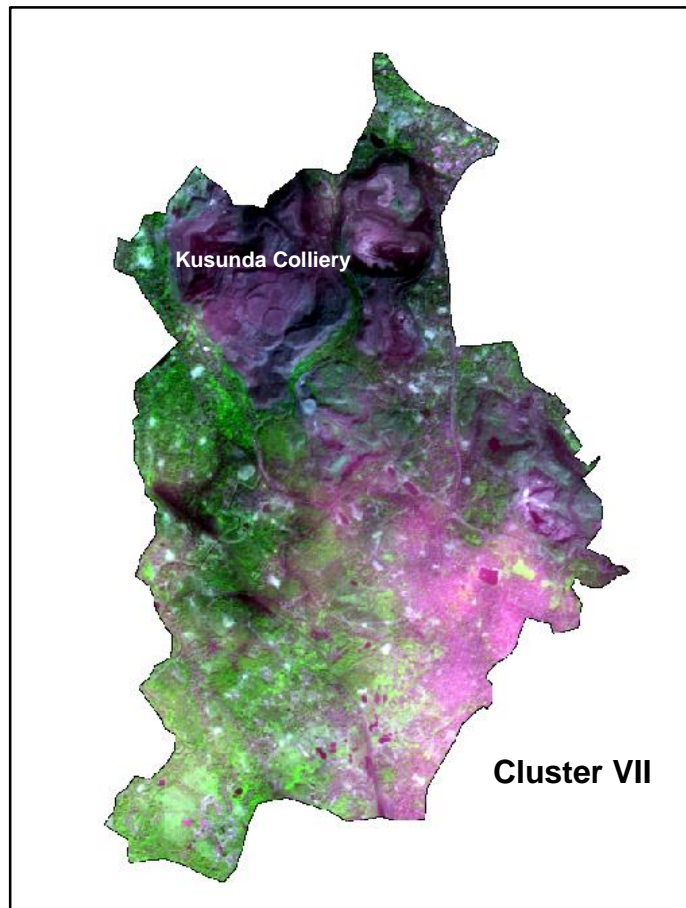
GROUNDWATER MONITORING STATION LOCATION MAP



- INDEX**
- GEOLOGICAL BOUNDARY
 - CLUSTER BOUNDARY
 - COLLIERY BOUNDARY
 - PROPOSED MINES
 - NON-BCL MINES
 - METAMORPHIC TERRAIN
 - SEDIMENTARY TERRAIN
 - CAPRII WELL
 - COMB WELL
 - RIVER/NADI/JORE

Customer		Bharat Coking Coal Limited		FIGURE NO.-1	
Groundwater Level Monitoring Report for		Jharia (B.S.C.L.)		31/12/17	
The title Cluster of mines, B.C.L.		Jharia (B.S.C.L.)		31/12/17	
Groundwater Monitoring		Jharia (B.S.C.L.)		31/12/17	
Station Location Map		Jharia (B.S.C.L.)		31/12/17	
Page No.		001		001	
Rev.		001		001	
Scale		1:50,000		1:50,000	

**Land Restoration / Reclamation Monitoring of Clusters of
(Opencast + Underground) Coal Mines of Bharat Coking Coal
Limited based on Satellite Data for the Year 2018**



Submitted to
Bharat Coking Coal Limited



cmpdi
A Mini-Ratna Company

**Land Restoration / Reclamation Monitoring of Clusters of
(Opencast + Underground) Coal Mines of Bharat Coking
Coal Limited based on Satellite Data for the Year 2018**

March-2019



**Remote Sensing Cell
Geomatics Division
CMPDI, Ranchi**

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Executive Summary

1. **Project** Land restoration / reclamation monitoring of clusters of (Opencast + Underground) coal mines of Bharat Coking Coal Ltd. (BCCL), based on satellite data, on every three year basis.
2. **Objective** Objective of the land restoration / reclamation monitoring is to assess the area of backfilled, plantation, social forestry, active mining area, water bodies, and distribution of wasteland, agricultural land and forest in the leasehold area of the project. This will help in assessing the progressive status of mined land reclamation and to take up remedial measures, if any, required for environmental protection.
3. **Salient Findings**
 - Four Clusters viz. I, IV, VII, X were selected in 2018-19 for land reclamation/restoration monitoring. These clusters consist of mainly opencast mines.
 - Out of the total leasehold area of 5883.96 Ha., total mined out area is only 1075.76 Ha., belonging to the OC mines.
 - It is evident from the analysis that 58.11% of excavated area is under technical reclamation and 35.02% of the excavated area is under active mining. Cluster wise details are given in Table-1 & Fig-1.
 - 13.61% of total leasehold area has come under plantation (% green cover)
 - Study reveals that out of total mine leasehold area of 5883.96 Ha. of the above mentioned 04 nos. clusters of BCCL taken up for the land reclamation monitoring during the year 2018-19; total excavated area is 1075.76 Ha. (18.28%) out of which 73.92 Ha. (6.87%) has been planted (*Biologically Reclaimed*), 625.15 Ha. (58.11%) is under backfilling (*Technical Reclamation*) and

balance 376.69 Ha. (35.02%) is under active mining

- This report and the findings will act as the basis for further monitoring and reclamation related activities.
- Out of the four clusters of BCCL, maximum land reclamation has been done in Cluster VII (76.09%) followed by Cluster X (71.00%).

Table 1

Land Reclamation Status in Clusters of (Underground + Opencast) Projects of BCCL based on Satellite Data of the Year 2018

(Area in Hectare)										
Sl. No.	Cluster No.	Total Leasehold Area	Technical Reclamation Area under Backfilling	Plantation			Area under Active Mining	Total Excavated Area	Total Area under Plantation (% Green Cover)	Total Area under Reclamation
				Biological Reclamation	Other Plantations					
				Plantation on Excavated / Backfilled Area	Plantation on External Over Burden Dumps	Social Forestry, Avaneue Plantation Etc.				
1	2	3	4	5	6	7	8	9 (=4+5+8)	10 (=5+6+7)	11(=4+5)
1	Cluster I	575.00	10.11	7.29	47.99	25.53	28.39	45.78	80.80	17.40
			22.08%	15.91%			62.00%		14.05%	38.00%
2	Cluster IV	1123.79	147.22	0.00	27.11	165.09	166.67	313.88	192.20	147.22
			46.90%	0.00%			53.10%		17.10%	46.90%
3	Cluster VII	2127.70	351.54	37.47	15.52	238.67	122.23	511.24	291.67	389.01
			68.76%	7.33%			23.91%		13.71%	76.09%
4	Cluster X	2057.47	116.28	29.16	66.09	140.75	59.41	204.86	236.00	145.44
			56.76%	14.23%			29.00%		11.47%	71.00%
	TOTAL	5883.96	625.15	73.92	156.71	570.04	376.69	1075.76	800.66	699.07
			58.11%	6.87%			35.02%	18.28%	13.61%	64.98%
(% is calculated with respect to Excavated Area as applicable)										

Note: In reference of the above Table, different parameters are classified as follows:

1. Area under Biological Reclamation includes Areas under Plantation done on Backfilled Area Only.
2. Area under Technical Reclamation includes Area under Barren Backfilling only
3. Area under Active Mining Includes Coal Quarry, Advance Quarry Site and Quarry filled with water etc., if any.
4. Social Forestry and Plantation on External OB Dumps are not included in Biological Reclamation and are put under separate categories as shown in the above Table.
5. (%) calculated in the above Table is in respect to Total Excavated Area except for "Total Area under Plantation" where % is in terms of "Leasehold Area".

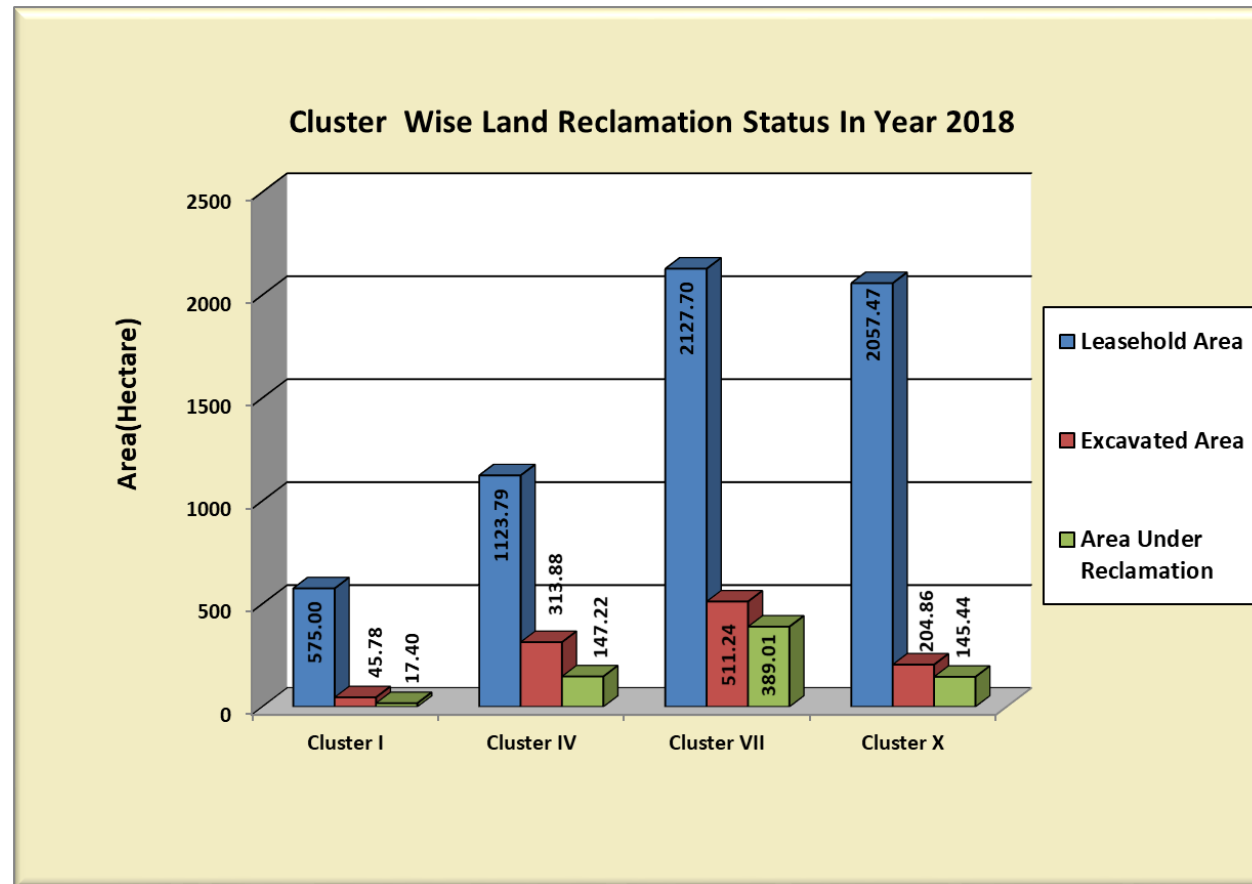


Fig. 1: Cluster wise Land Reclamation Status-2018 (BCCL)

1. Background

- 1.1** Land is the most important natural resource which embodies soil, water, flora, fauna and total ecosystem. All human activities are based on the land which is the scarcest natural resource in our country. Mining is a site specific industry and it could not be shifted anywhere else from the location where mineral occurs. It is a fact that surface mining activities do affect the land environment due to ground breaking. Therefore, there is an urgent need to reclaim and restore the mined out land for its productive use for sustainable development of mining. This will not only mitigate environmental degradation, but would also help in creating a more congenial environment for land acquisition by coal companies in future.
- 1.2** Keeping above in view, Coal India Ltd. (CIL) issued a work order vide letter no. CIL/WBP/ENV/2017/DP/8391 dated 22.06.2017 to Central Mine Planning & Design Institute (CMPDI), Ranchi, for monitoring of clusters with coal mines (both underground and open cast projects) having less than 5 million m³ per annum capacity (Coal +OB) at an interval of three years based on remote sensing satellite data for sustainable development of mining. Earlier, CMPDI used to carry out land reclamation monitoring for individual projects of less than 5 million capacity, but from 2018 the same will be carried out cluster wise for mines of ECL & BCCL. For operational reasons and convenience, underground and opencast mines (often with multiple overlapping seams), have now been clustered together. The result of land reclamation status of all such mines are hosted on the website of CIL, (www.coalindia.in), CMPDI (www.cmpdi.co.in) and the concerned coal companies in public domain. Detailed report is submitted to Coal India and respective subsidiaries.

- 1.3** Land reclamation monitoring of all cluster coal mining projects would also comply the statutory requirements of Ministry of Environment & Forest (MoEF). Such monitoring would not only facilitate in taking timely mitigation measures against environmental degradation, but would also enable coal companies to utilize the reclaimed land for larger socio-economic benefits in a planned way.
- 1.4** Present report is embodying the finding of the study based on satellite data of the year 2018 carried out for four clusters of mines comprising both underground and OC projects for Bharat Coking Coal Ltd.

2. Objective

Objective of the land reclamation/restoration monitoring is to assess the area of backfilled, plantation, OB dumps, social forestry, active mining area, settlements and water bodies, distribution of wasteland, agricultural land and forest land in the leasehold area of the project. This is an important step taken up for assessing the progressive status of mined land reclamation and for taking up remedial measures, if any, required for environmental protection.

3. Methodology

There are number of steps involved between raw satellite data procurement and preparation of final map. National Remote Sensing Centre (NRSC) Hyderabad, being the nodal agency for satellite data supply in India, provides only raw digital satellite data, which needs further digital image processing for extracting the information and map preparation before uploading the same in the website. Methodology for land reclamation monitoring is given in fig 2. Following steps are involved in land reclamation /restoration monitoring:

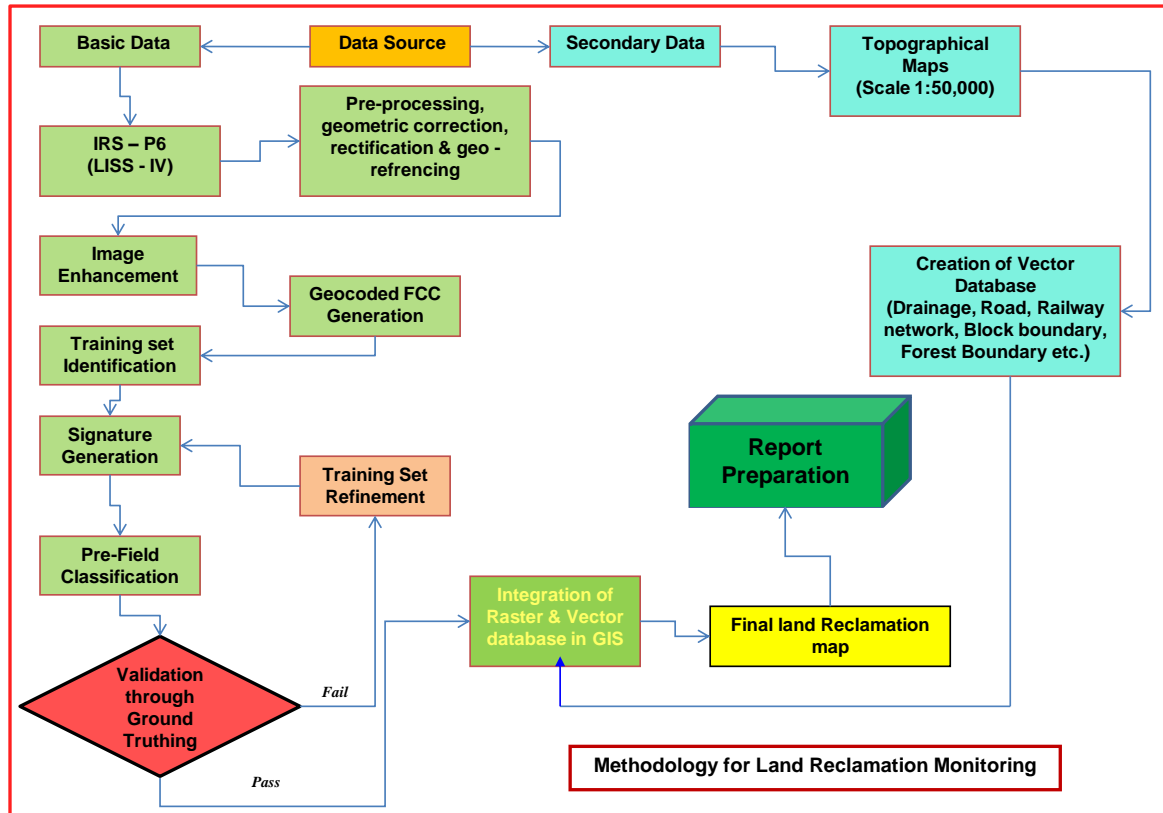


Fig. 2: Methodology of Land Reclamation Monitoring

3.1 Data Procurement: After browsing the data quality and date of pass on internet, supply order for data is placed to NRSC. Secondary data like leasehold boundary, toposheet are procured for creation of vector database.

3.2 Satellite Data Processing: Satellite data are processed using ERDAS IMAGINE digital image processing s/w. Methodology involves the following major steps:

- **Rectification & Geo-referencing:** Inaccuracies in digital imagery may occur due to 'systematic errors' attributed to earth curvature and rotation as well as 'non-systematic errors' attributed to satellite receiving station itself. Raw digital images contain geometric distortions, which make them

unusable as maps. Therefore, geo-referencing is required for correction of image data using ground control points (GCP) to make it compatible to Sol toposheet.

- **Image enhancement:**

To improve the interpretability of the raw data, image enhancement is necessary. Local operations modify the value of each pixel based on brightness value of neighbouring pixels using ERDAS IMAGINE 14.0 s/w. and enhance the image quality for interpretation.

- **Training set selection**

Training set requires to be selected, so that software can classify the image data accurately. The image data are analysed based on the interpretation keys. These keys are evolved from certain fundamental image-elements such as tone/colour, size, shape, texture, pattern, location, association and shadow. Based on the image-elements and other geo-technical elements like land form, drainage pattern and physiography; training sets were selected/identified for each land use/cover class. Field survey was carried out by taking selective traverses in order to collect the ground information (or reference data) so that training sets are selected accurately in the image. This was intended to serve as an aid for classification.

- **Classification and Accuracy assessment**

Image classification is carried out using the maximum likelihood algorithm. The classification proceeds through the following steps: (a) calculation of statistics [i.e. signature generation] for the identified training areas, and (b) the decision boundary of maximum probability based on the mean vector, variance, covariance and correlation matrix of the pixels. After evaluating the statistical parameters of the training sets, reliability test of training sets is conducted by measuring the statistical separation between

the classes that resulted from computing divergence matrix. The overall accuracy of the classification was finally assessed with reference to ground truth data.

- **Area calculation**

The area of each land use class in the leasehold is determined using ERDAS IMAGINE v. 14.0 s/w.

- **Overlay of Vector data base**

Vector data base is created based on secondary data. Vector layer like drainage, railway line, leasehold boundary, forest boundary etc. are superimposed on the image as vector layer in the Arc GIS database.

- **Pre-field map preparation**

Pre-field map is prepared for validation of the classification result

3.3 Ground Truthing:

Selective ground verification of the land use classes are carried out in the field and necessary corrections if required, are incorporated before map finalization.

3.4 Land reclamation database on GIS:

Land reclamation database is created on GIS platform to identify the temporal changes identified from satellite data of different cut - of dates.

4. Land Reclamation Status in Bharat Coking Coal Ltd.

4.1 In BCCL, a total of twelve clusters of mines are selected for land reclamation monitoring. Following four clusters of mines comprising both underground and OC projects of Bharat Coking Coal Ltd. have been taken up for land reclamation monitoring in 2018.

- Cluster I (Damoda OCP)
- Cluster IV (Salanpur Colliery, Katras Choitudih Colliery, Gaslitand Colliery, Amalgamated Keshalpur West Mudidih Colliery, Angarpathra Colliery & Ramkanali Colliery)
- Cluster VII (Amalgamated East Bhuggatdih Simlabahal Colliery, Ena OC, Vishwakarma OCP, Kustore OCP)
- Cluster X (Bhowrah North, Bhowrah South, Patherdih)

4.2 All the four above clusters, have been mapped during the year 2018 for assessing the progress of land reclamation.

4.3 Area statistics of different land use classes present in OC projects till the year 2018 is given in Table 2. Land use maps derived from the satellite data are given in Plate nos.1, 2, 3 & 4. The land use status are shown in Fig. 3, 4, 5 & 6.

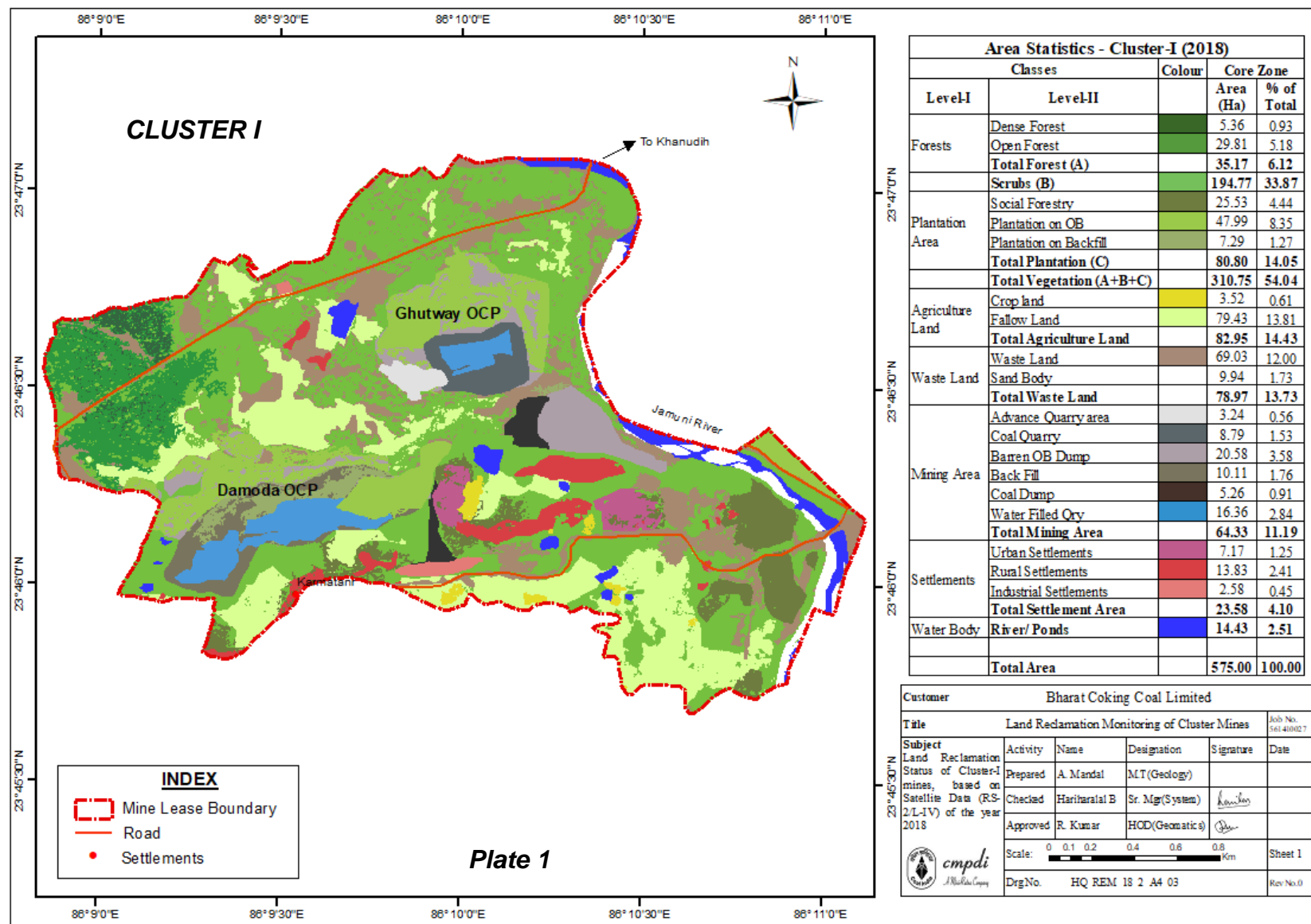
4.4 Study reveals that majority of the mines under the clusters considered for monitoring are of opencast type. 35.02% of excavated area is under active mining in the opencast mines. 58.11% of the excavated area have come under technical reclamation till 2018

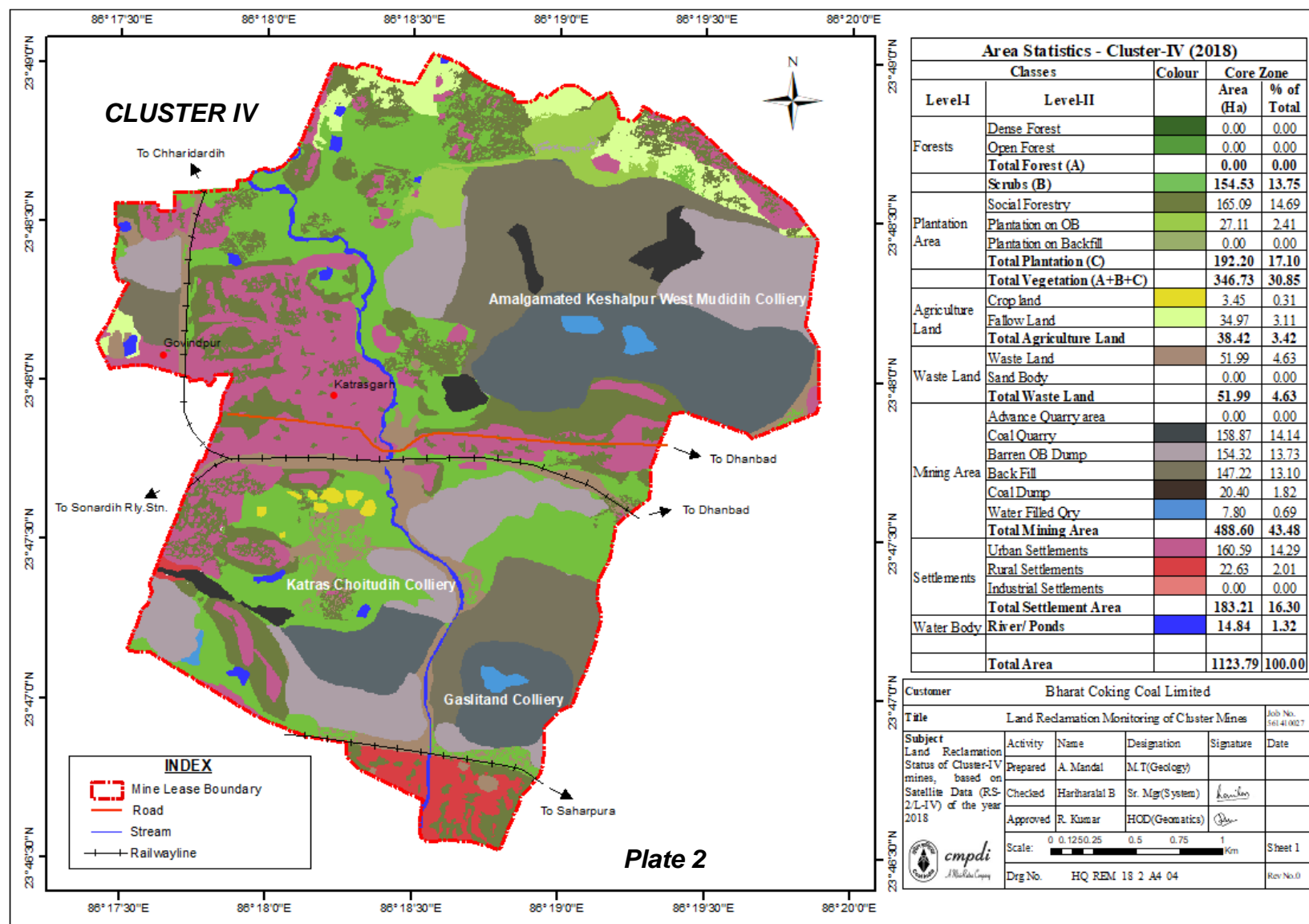
Table 2

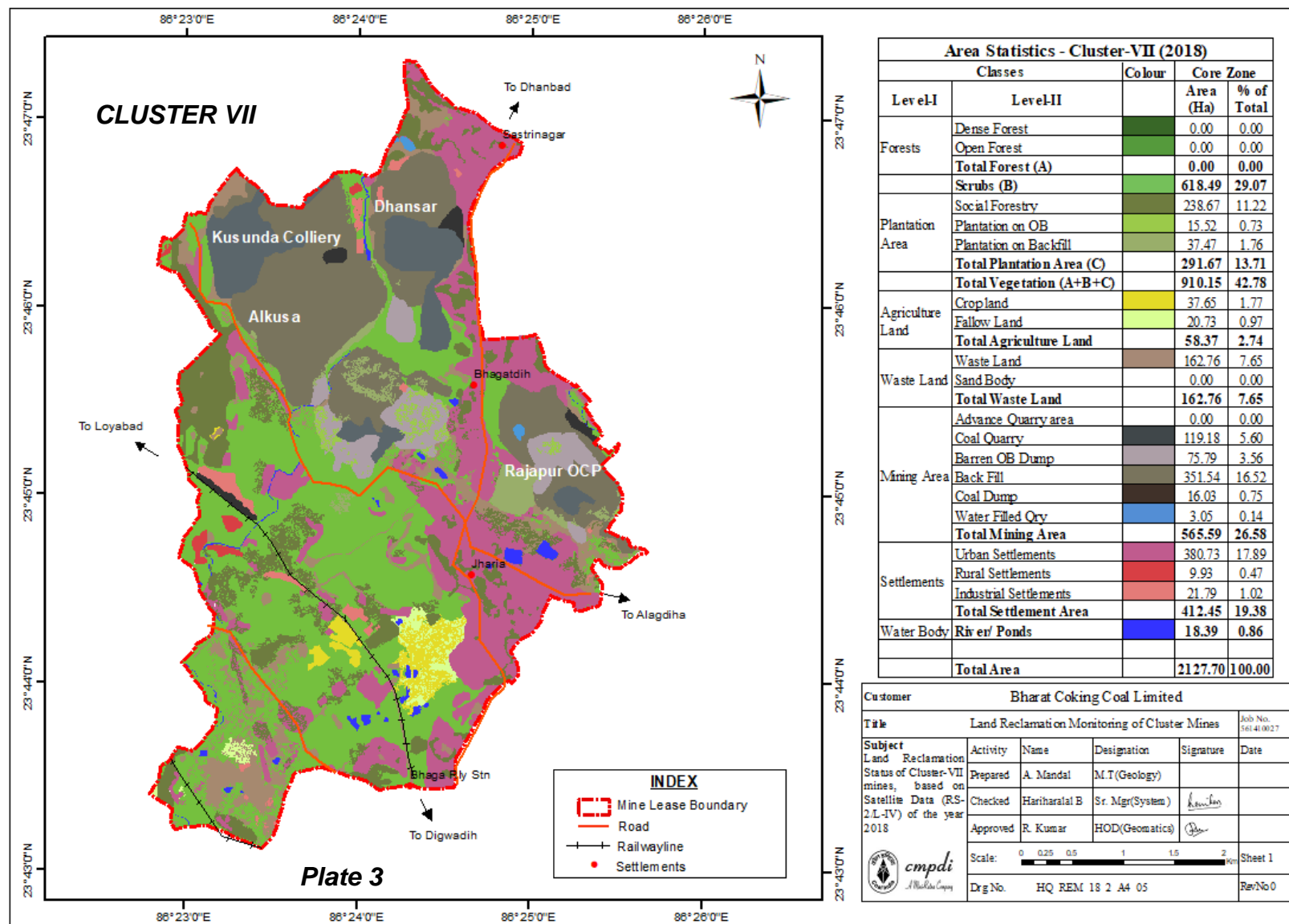
**Status of Land Use/Reclamation Status in Clusters of (OC + Underground) mines of
Bharat Coking Coal Limited based on Satellite Data of the year 2018**

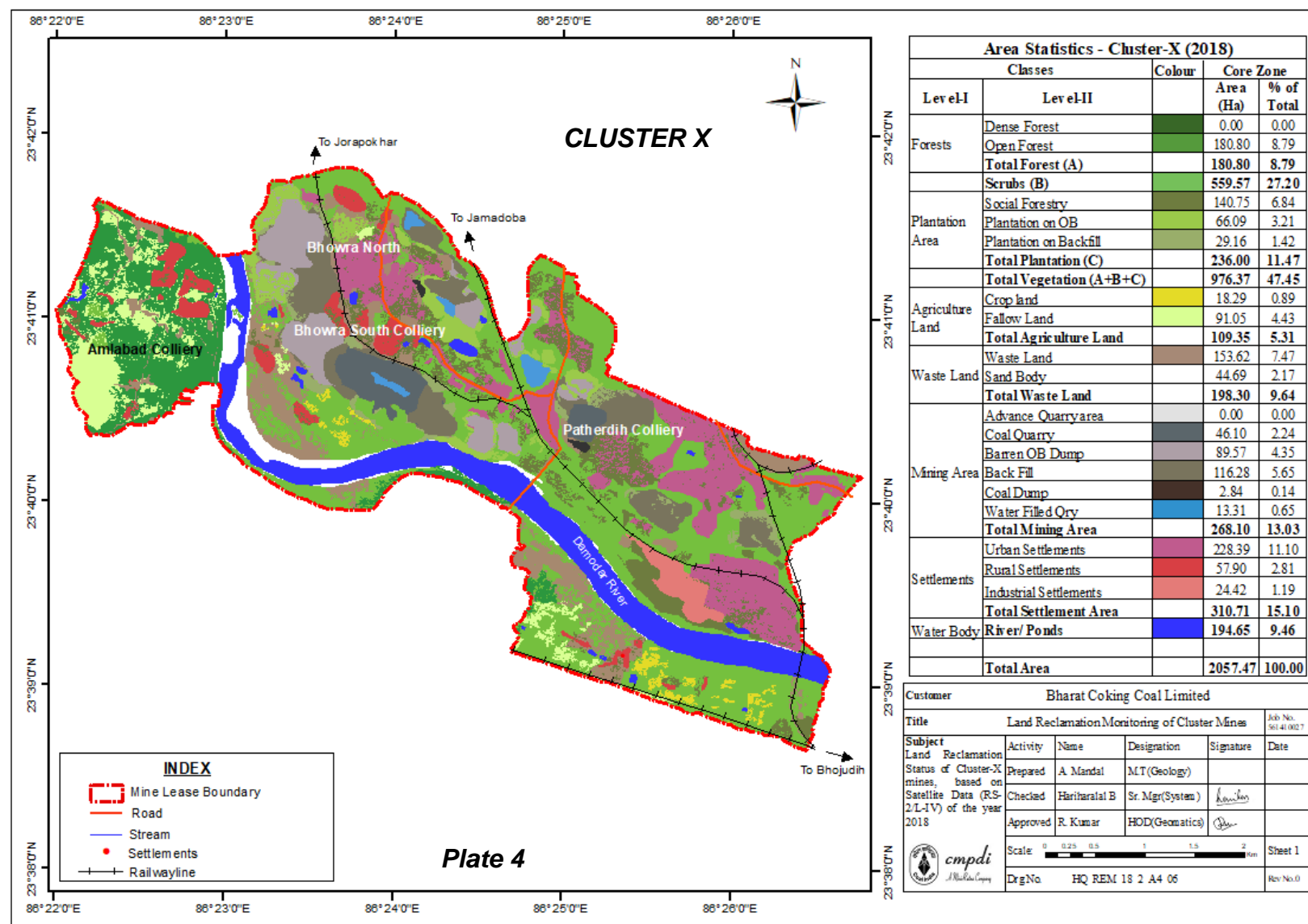
(Area in Hectare)

			CLUSTER I		CLUSTER IV		CLUSTER VII		CLUSTER X		TOTAL	
			Area	%	Area	%	Area	%	Area	%	Area	%
FORESTS	Dense Forest		5.36	0.93	0.00	0.00	0.00	0.00	0.00	0.00	5.36	0.09
	Open Forest		29.81	5.18	0.00	0.00	0.00	0.00	180.80	8.79	210.61	3.58
	Total Forest		35.17	6.12	0.00	0.00	0.00	0.00	180.80	8.79	215.97	3.67
SCRUBS	Scrubs		194.77	33.87	154.53	13.75	618.49	29.07	559.57	27.20	1527.35	25.96
PLANTATION	Social Forestry/Avenue Plantation		25.53	4.44	165.09	14.69	238.67	11.22	140.75	6.84	570.04	9.69
	Plantation on OB Dump		47.99	8.35	27.11	2.41	15.52	0.73	66.09	3.21	156.71	2.66
	Plantation on Backfill (Biological Reclamation)		7.29	1.27	0.00	0.00	37.47	1.76	29.16	1.42	73.92	1.26
	Total Plantation		80.80	14.05	192.20	17.10	291.67	13.71	236.00	11.47	800.66	13.61
	Total Vegetation		310.75	54.04	346.73	30.85	910.15	42.78	976.37	47.45	2543.99	43.24
ACTIVE MINING	Coal Dump		5.26	0.91	20.40	1.82	16.03	0.75	2.84	0.14	44.53	0.76
	Coal Quarry		8.79	1.53	158.87	14.14	119.18	5.60	46.10	2.24	332.94	5.66
	Advance Quarry Site		3.24	0.56	0.00	0.00	0.00	0.00	0.00	0.00	3.24	0.06
	Quarry Filled With Water		16.36	2.84	7.80	0.69	3.05	0.14	13.31	0.65	40.52	0.69
	Total Area under Active Mining		28.39	4.93	166.67	14.83	122.23	5.74	59.41	2.89	376.69	6.40
	Barren OB Dump		20.58	3.58	154.32	13.73	75.79	3.56	89.57	4.35	340.25	5.78
RECLAIMED	Area Under Backfilling (Technical Reclamation)		10.11	1.76	147.22	13.10	351.54	16.52	116.28	5.65	625.15	10.62
	Total Area under Technical Reclamation		10.11	1.76	147.22	13.10	351.54	16.52	116.28	5.65	625.15	10.62
	Total Area under Mine Operation		64.33	11.19	488.60	43.48	565.59	26.58	268.10	13.03	1386.62	23.57
WASTELAND	Waste Lands		69.03	12.00	51.99	4.63	162.76	7.65	153.62	7.47	437.40	7.43
	Fly Ash Pond / Sand Body		9.94	1.73	0.00	0.00	0.00	0.00	44.69	2.17	54.63	0.93
	Total Wasteland		78.97	13.73	51.99	4.63	162.76	7.65	198.30	9.64	492.02	8.36
WATERBODIES	Reservoir, nallah, ponds		14.43	2.51	14.84	1.32	18.39	0.86	194.65	9.46	242.30	4.12
	Total Waterbodies		14.43	2.51	14.84	1.32	18.39	0.86	194.65	9.46	242.30	4.12
AGRICULTURE	Crop Lands		3.52	0.61	3.45	0.31	37.65	1.77	18.29	0.89	62.91	1.07
	Fallow Lands		79.43	13.81	34.97	3.11	20.73	0.97	91.05	4.43	226.18	3.84
	Total Agriculture		82.95	14.43	38.42	3.42	58.37	2.74	109.35	5.31	289.09	4.91
SETTLEMENTS	Urban Settlement		7.17	1.25	160.59	14.29	380.73	17.89	228.39	11.10	776.88	13.20
	Rural Settlement		13.83	2.41	22.63	2.01	9.93	0.47	57.90	2.81	104.29	1.77
	Industrial Settlement		2.58	0.45	0.00	0.00	21.79	1.02	24.42	1.19	48.80	0.83
	Total Settlement		23.58	4.10	183.21	16.30	412.45	19.38	310.71	15.10	929.96	15.80
	Grand Total		575.00	100.00	1123.79	100.00	2127.70	100.00	2057.47	100.00	5883.96	100.00









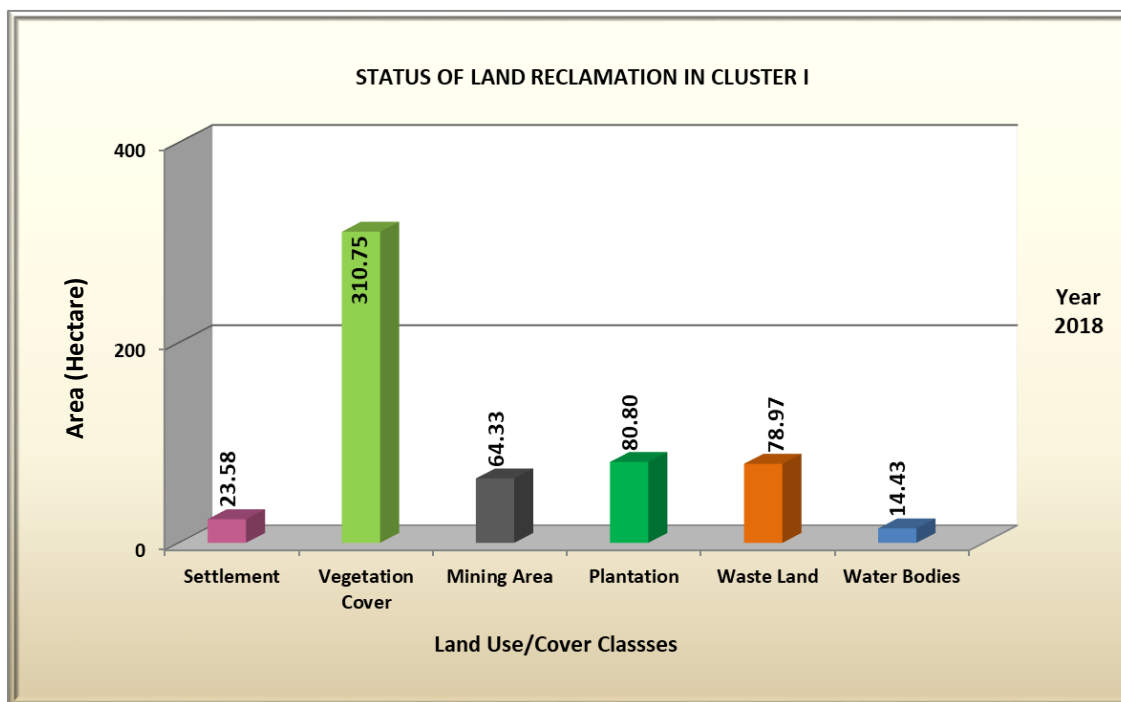


Fig. 3: Land Reclamation status of Cluster I

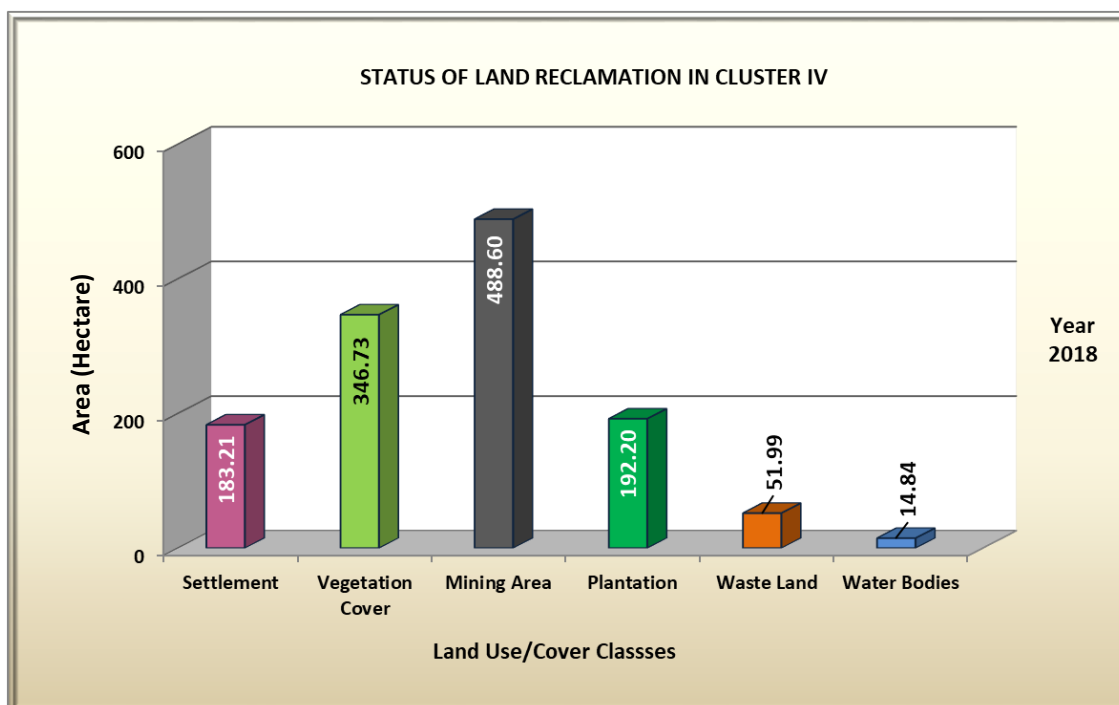


Fig. 4: Land Reclamation status of Cluster IV

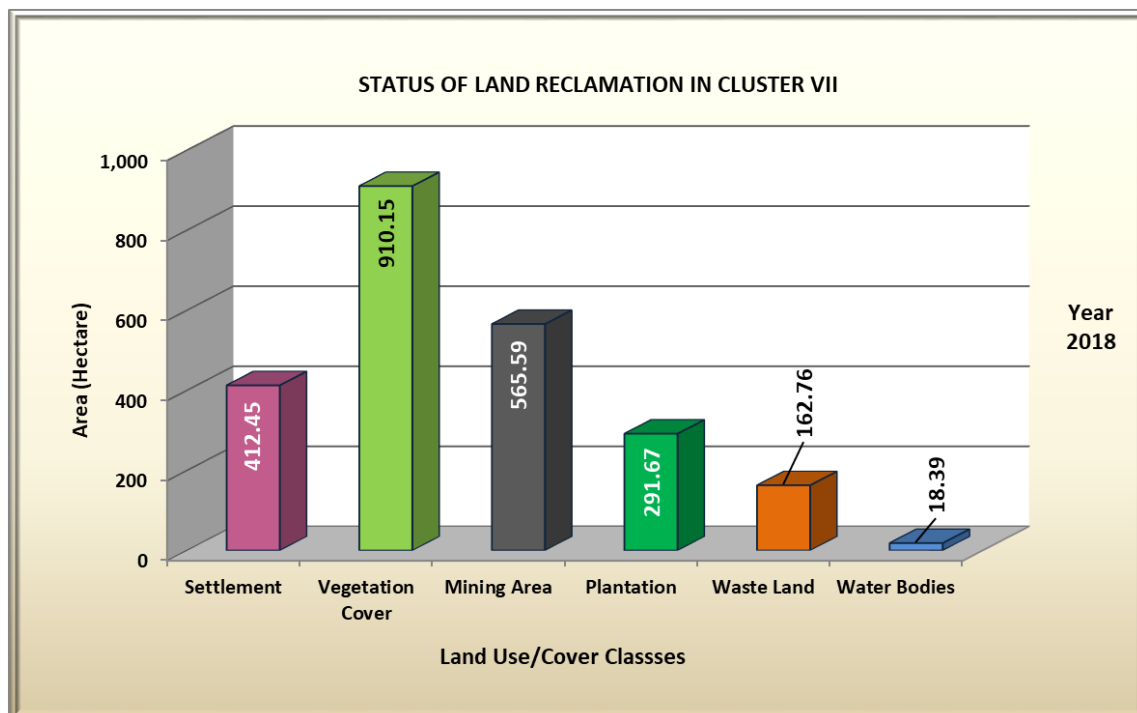


Fig. 5: Land Reclamation status of Cluster VII

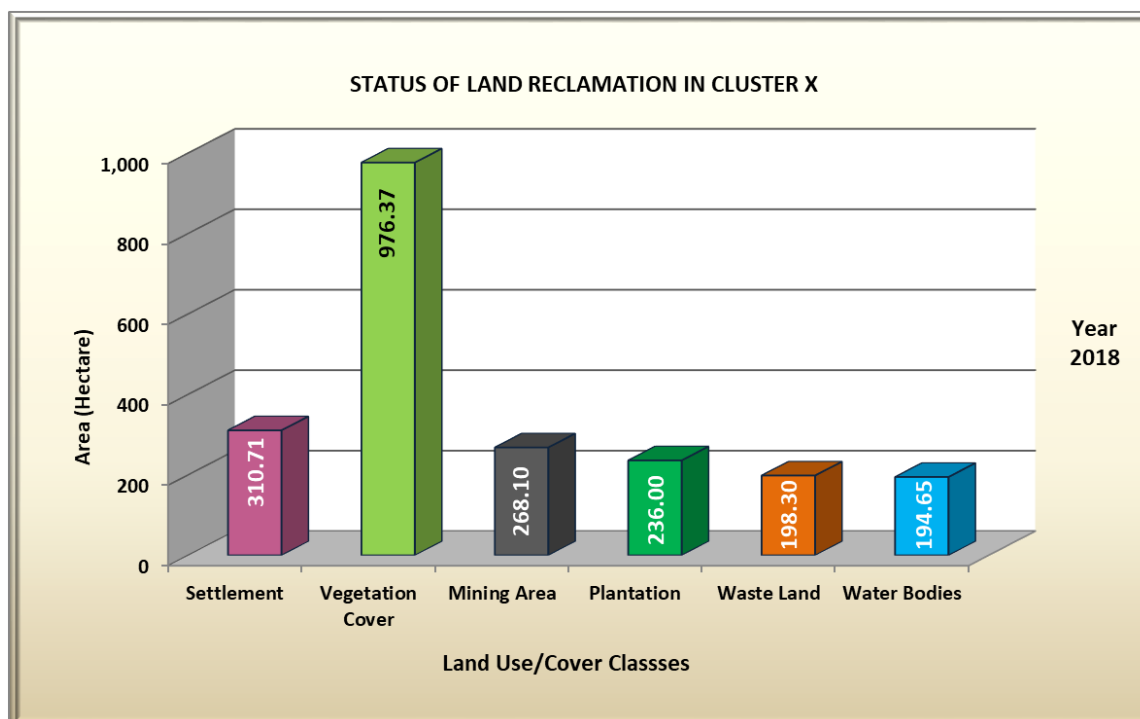


Fig. 6: Land Reclamation status of Cluster X



Photo 1: Ecological Restoration Site, Damoda Colliery, Cluster I



Photo 2: Ecological Restoration Site in Cluster IV



Photo 3: Ecological Restoration Site in Cluster VII



Photo 4: Plantation on OB in Cluster X



cmpdi
A Mini-Ratna Company

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Website : www.cmpdi.co.in, Email : cmpdihq@cmpdi.co.in

ANNEXURE-X



BHARAT COKING COAL LIMITED
(A Subsidiary of Coal India Limited – A Maharatna Company)

CORPORATE ENVIRONMENTAL POLICY

Bharat Coking Coal Limited (BCCL), a subsidiary of Coal India Limited, is a Public Sector Undertaking engaged in mining of coal and allied activities. It is the only producer of Prime Coking Coal in India. BCCL was incorporated in 1972 to operate coking coal mines operating in the Jharia and Raniganj Coalfields. Currently, the Company operates 66 coal mines and 8 Coal Washeries.

Our mission is to produce the planned quantity of coal efficiently and economically with due regard to safety, conservation and quality. BCCL affirms its commitment for environment friendly mining with right mitigation of pollution, reclamation of the degraded land, preservation of biodiversity and proper disposal of waste following the best environmental practices including judicious use of the non-renewable energy on the path of continual improvement. Towards this commitment, BCCL shall endeavor to:

- ❖ Conduct mining and associated operations in an environmentally responsible manner to comply with applicable laws and other requirements related to environmental aspects.
- ❖ Design projects with due consideration of Sustainable Development by integrating sound environmental management practices in all our activities.
- ❖ Prevent pollution of surrounding habitation by continuous monitoring and adopting suitable measures for environment protection.
- ❖ Ensure compliance of all applicable Environmental and Forest Clearance conditions and other statutory conditions issued by regulatory agencies.
- ❖ Implement the Environmental Management Plans in all our mines effectively to mitigate pollutions on air, water and noise; proper disposal of wastes and reclamation and ecological restoration of degraded land; and by also dovetailing the Jharia action/ Master Plan for dealing with Fires, Subsidence and Rehabilitation of affected people with the Environmental Management Plans under the Cluster Concept.
- ❖ Strive to conserve Bio-Diversity through Ecological restoration methods.
- ❖ Conserve natural resources through recycling of wastes on the principle of Reduce, Recycle and Reuse. Put special thrusts on efficient energy utilization as a measure to reduce carbon foot-print.
- ❖ Strive for continual improvement in our environmental performances by setting targets, measuring progress and taking corrective action.
- ❖ Create environmental awareness among the employees and the local communities through pro-active communication and training and encourage our business associates to adopt similar approach for environmental protection.

Place: Dhanbad
Date: 25.5.12


Chairman-cum-Managing Director

Chairman-cum-Mg. Director
BHARAT COKING COAL LIMITED
Koyla Bhawan, Dhanbad-826 005

ANNEXURE-XI

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 –XI
(FOR THE MONTH OCTOBER, 2018)**

E. C. no. J-11015/77/2011-IA.II (M) dated 26.08.2013.

CMPDI

ISO 9001 Company
Regional Institute-II
Dhanbad, Jharkhand

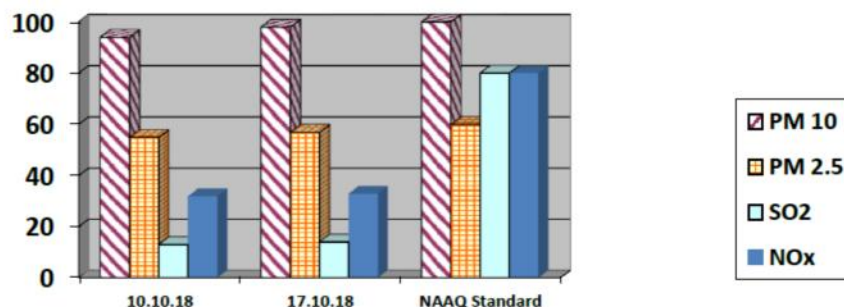
AMBIENT AIR QUALITY DATA

Cluster –XI, Bharat Coking Coal limited

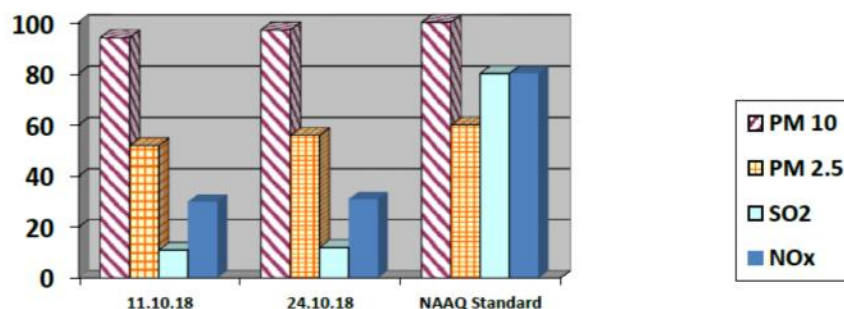
Month: OCT ,2018

Year : 2018-19.

StationNameA16-Pootkee Balihari office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	10.10.18	94	55	13	32
2	17.10.18	98	57	14	33
	NAAQ Standard	100	60	80	80



Station Name: A17- Moonidih UGP		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	11.10.18	94	52	11	30
2	24.10.18	97	56	12	31
	NAAQ Standard	100	60	80	80



समन सेवित, रुद्र

Analysed By
JSA/SA/SSA

✓

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

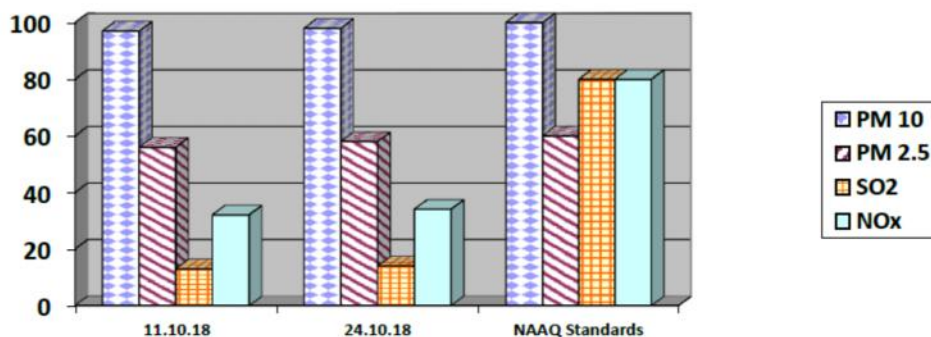
21/10/18

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

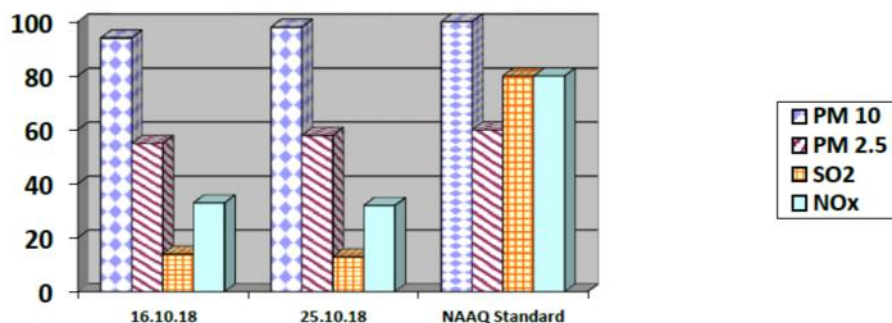
JOB NO. 200316028

Cluster –XI, BCCL Environmental Monitoring Report

Station Name: A29-Moonidih Washery		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	11.10.18	97	56	13	32
2	24.10.18	98	58	14	34
	NAAQ Standards	100	60	80	80



StationName: Kusunda OCP (A10)		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	16.10.18	94	55	14	33
2	25.10.18	98	58	13	32
	NAAQ Standard	100	60	80	80



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

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Lab In Charge
RI-2, CMPDI, Dhanbad

21/10/18

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

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

1. Pootkee Balihari Office (N16)
2. Moonidih UGP (N17)
3. Moonidih Washery (N29)
4. Kusunda OCP (N10)

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).

4.2 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 -XI			Month: OCT , 2018		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Pootkee Balihari Office (N16)	Industrial area	10.10.18	74.7	75
2	Pootkee Balihari Office (N16)	Industrial area	17.10.18	71.9	75
3	Moonidih UGP (N17)	Industrial area	11.10.18	66.6	75
4	Moonidih UGP (N17)	Industrial area	24.10.18	62.3	75
5	Moonidih Washery (N29)	Industrial area	11.10.18	72.4	75
6	Moonidih Washery (N29)	Industrial area	24.10.18	66.4	75
7	Kusunda OCP (N10)	Industrial area	16.10.18	61.6	75
8	Kusunda OCP (N10)	Industrial area	25.10.18	73.1	75

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

* Day Time: 6.00 AM to 10.00 PM.

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Analysed By
JSA/SA/SSA

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

21/10/18
Approved By
HOD(Mining/Environment)
RI-2, CMPDI, Dhanbad

JOB NO. 200316028

Cluster -XI, BCCL Environmental Monitoring Report

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**ENVIRONMENTAL MONITORING REPORT
OF
BHARAT COKING COAL LIMITED,
CLUSTER –XI
(FOR THE MONTH NOVEMBER, 2018)**

E. C. no. J-11015/77/2011-IA.II (M) dated 26.08.2013-

CMPDI

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

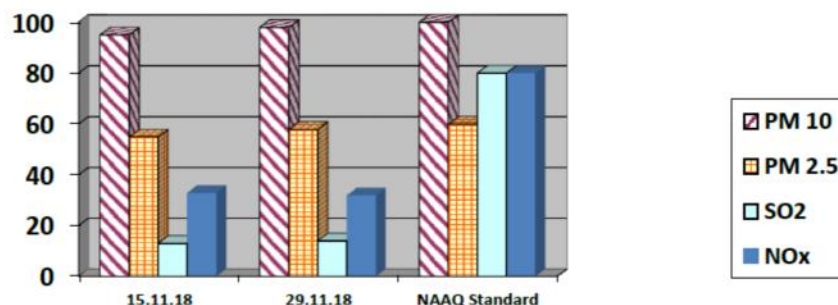
AMBIENT AIR QUALITY DATA

Cluster –XI, Bharat Coking Coal limited

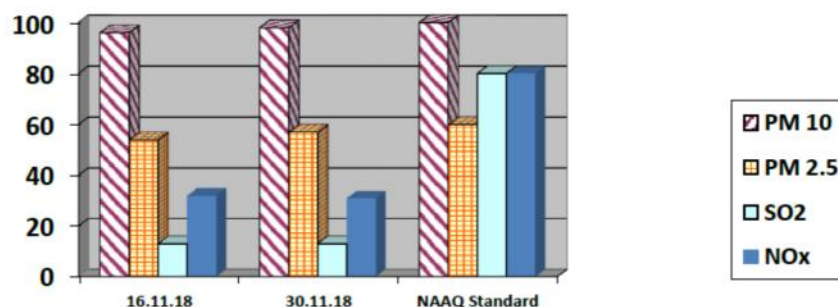
Month: NOV ,2018


Year : 2018-19.


StationNameA16-Pootkee Balihari office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	15.11.18	95	55	13	33
2	29.11.18	98	58	14	32
	NAAQ Standard	100	60	80	80



Station Name: A17- Moonidih UGP		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	16.11.18	96	54	13	32
2	30.11.18	98	57	13	31
	NAAQ Standard	100	60	80	80




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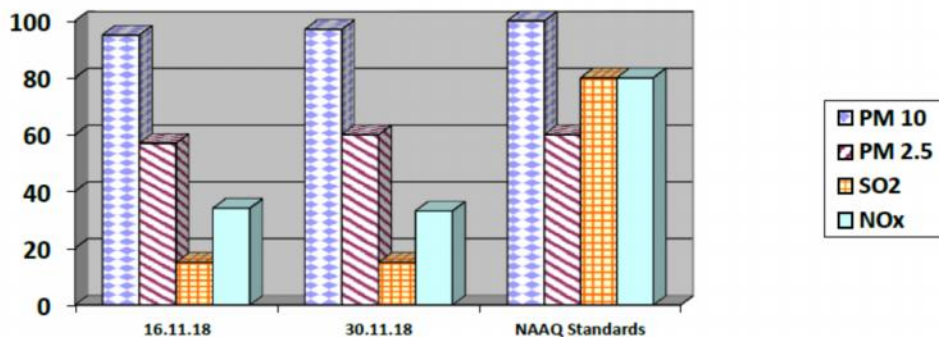

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 Lab In Charge
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 HOD(Mining/Environment)
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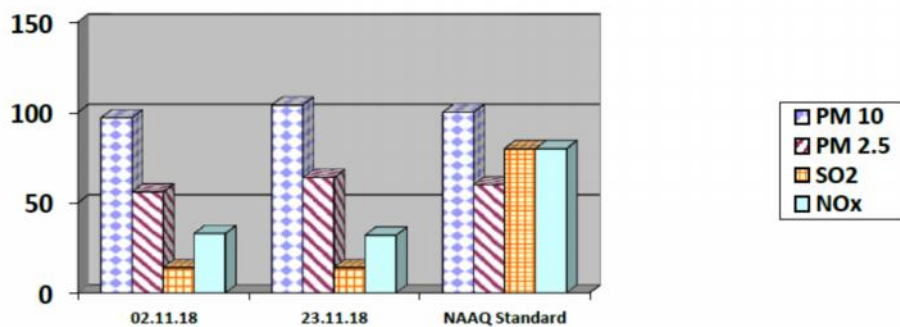
JOB NO. 200316028

Cluster –XI, BCCL Environmental Monitoring Report

Station Name: A29-Moonidih Washery		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	16.11.18	95	57	15	34
2	30.11.18	97	60	15	33
	NAAQ Standards	100	60	80	80



StationName: Kusunda OCP (A10)		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	02.11.18	97	56	14	33
2	23.11.18	104	64	14	32
	NAAQ Standard	100	60	80	80



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

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RI-2, CMPDI, Dhanbad

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

1. Pootkee Balihari Office (N16)
2. Moonidih UGP (N17)
3. Moonidih Washery (N29)
4. Kusunda OCP (N10)

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).

4.2 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 -XI			Month: NOV, 2018		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Pootkee Balihari Office (N16)	Industrial area	15.11.18	75	75
2	Pootkee Balihari Office (N16)	Industrial area	29.11.18	73.4	75
3	Moonidih UGP (N17)	Industrial area	16.11.18	68.2	75
4	Moonidih UGP (N17)	Industrial area	30.11.18	65.4	75
5	Moonidih Washery (N29)	Industrial area	16.11.18	71.8	75
6	Moonidih Washery (N29)	Industrial area	30.11.18	71.6	75
7	Kusunda OCP (N10)	Industrial area	2.11.18	63.8	75
8	Kusunda OCP (N10)	Industrial area	23.11.18	62.1	75

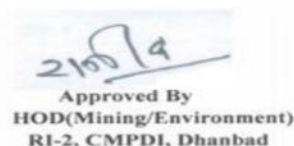
*Permissible limits of Noise Level as per MOEF Gazette Notification No. GSR 742(E) dt. 25.09.2000 Standards for Coal Mines and Noise Pollution (Regulation and Control) Rules, 2000.

* Day Time: 6.00 AM to 10.00 PM.



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RI-2, CMPDI, Dhanbad

JOB NO. 200316028

Cluster -XI, BCCL Environmental Monitoring Report

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**ENVIRONMENTAL MONITORING REPORT
OF
BHARAT COKING COAL LIMITED,
CLUSTER –XI
(FOR THE MONTH DECEMBER, 2018)**

E. C. no. J-11015/77/2011-IA.II (M) dated 26.08.2013.

CMPDI

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Regional Institute-II
Dhanbad, Jharkhand

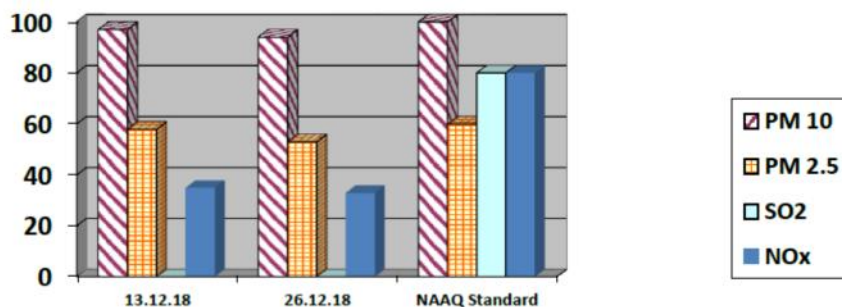
AMBIENT AIR QUALITY DATA

Cluster –XI, Bharat Coking Coal limited

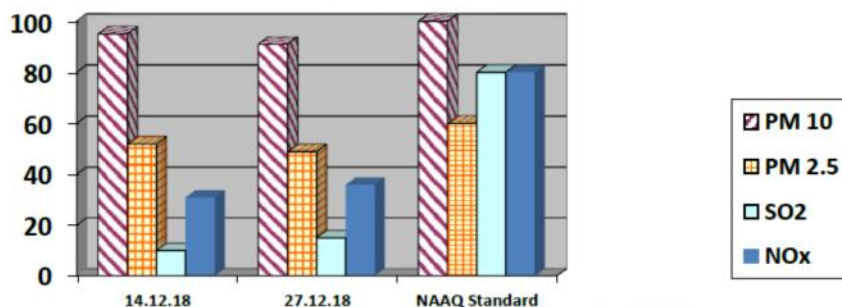
Month: DEC ,2018


Year : 2018-19.


StationNameA16-Pootkee Balihari office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	13.12.18	97	58	<10	35
2	26.12.18	94	53	<10	33
	NAAQ Standard	100	60	80	80



Station Name: A17- Moonidih UGP		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	14.12.18	95	52	10	31
2	27.12.18	91	49	15	36
	NAAQ Standard	100	60	80	80

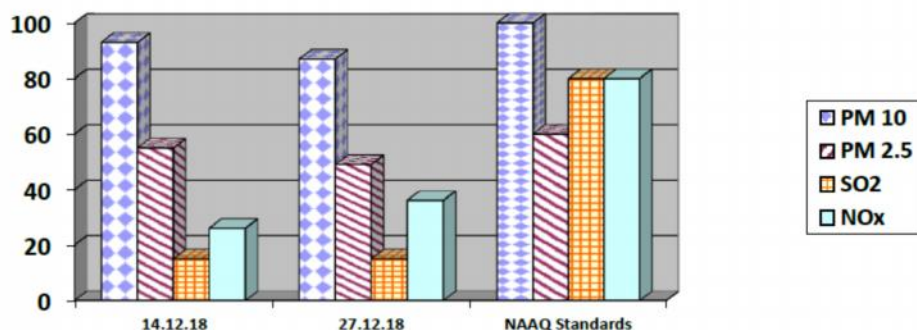



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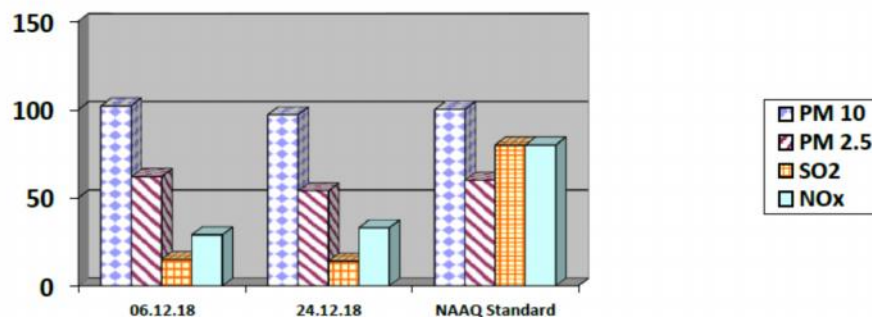

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 HOD(Mining/Environment)
 RI-2, CMPDI, Dhanbad

Station Name: A29-Moonidih Washery		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	14.12.18	93	55	15	26
2	27.12.18	87	49	15	36
	NAAQ Standards	100	60	80	80



StationName: Kusunda OCP (A10)		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	06.12.18	102	62	15	29
2	24.12.18	97	54	14	33
	NAAQ Standard	100	60	80	80



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

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21/12/18

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

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

1. Pootkee Balihari Office (N16)
2. Moonidih UGP (N17)
3. Moonidih Washery (N29)
4. Kusunda OCP (N10)

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).

4.2 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 -XI			Month: DEC., 2018		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Pootkee Balihari Office (N16)	Industrial area	13.12.18	68.5	75
2	Pootkee Balihari Office (N16)	Industrial area	26.12.18	67.6	75
3	Moonidih UGP (N17)	Industrial area	14.12.18	61.5	75
4	Moonidih UGP (N17)	Industrial area	27.12.18	61.3	75
5	Moonidih Washery (N29)	Industrial area	14.12.18	61.5	75
6	Moonidih Washery (N29)	Industrial area	27.12.18	63.4	75
7	Kusunda OCP (N10)	Industrial area	06.12.18	64.1	75
8	Kusunda OCP (N10)	Industrial area	24.12.18	64.5	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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RI-2, CMPDI, Dhanbad

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

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**ENVIRONMENTAL MONITORING REPORT
OF
BHARAT COKING COAL LIMITED,
CLUSTER –XI
(FOR THE MONTH JANUARY, 2019)**

E. C. no. J-11015/77/2011-IA.II (M) dated 26.08.2013.

CMPDI

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**Regional Institute-II
Dhanbad, Jharkhand**

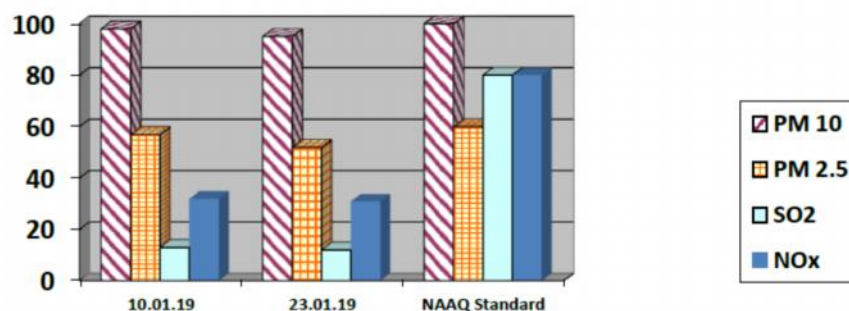
AMBIENT AIR QUALITY DATA

Cluster –XI, Bharat Coking Coal limited

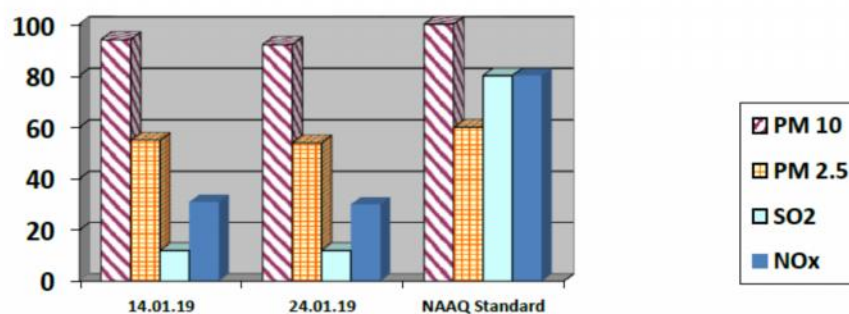
Month: JAN ,2019

Year : 2018-19.

StationNameA16-Pootkee Balihari office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	10.01.19	98	57	13	32
2	23.01.19	95	52	12	31
	NAAQ Standard	100	60	80	80



Station Name: A17- Moonidih UGP		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	14.01.19	94	55	12	31
2	24.01.19	92	54	12	30
	NAAQ Standard	100	60	80	80



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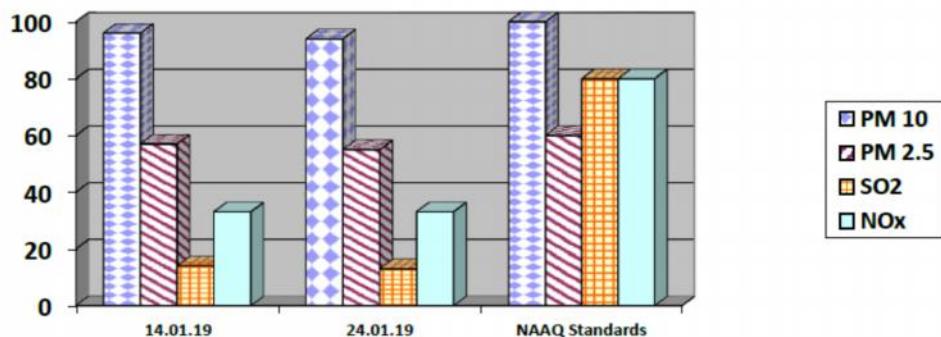
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HOD(Mining/Environment)
RI-2, CMPDI, Dhanbad

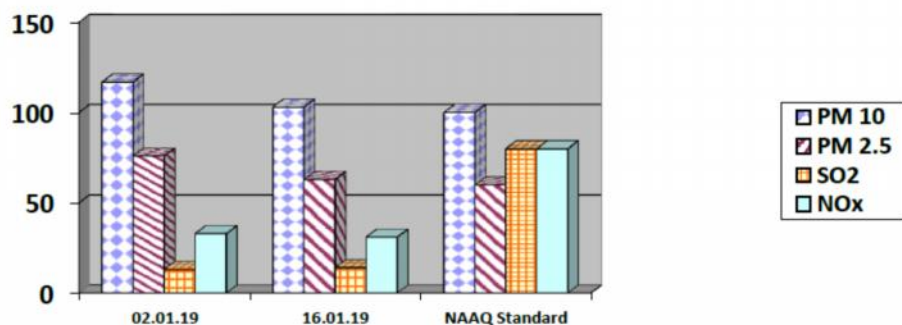
JOB NO. 200316028

Cluster –XI, BCCL Environmental Monitoring Report

Station Name: A29-Moonidih Washery		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	14.01.19	96	57	14	33
2	24.01.19	94	55	13	33
	NAAQ Standards	100	60	80	80



StationName: Kusunda OCP (A10)		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	02.01.19	117	76	13	33
2	16.01.19	103	63	14	31
	NAAQ Standard	100	60	80	80



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

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21/01/19

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

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

1. Pootkee Balihari Office (N16)
2. Moonidih UGP (N17)
3. Moonidih Washery (N29)
4. Kusunda OCP (N10)

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).

4.2 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 -XI			Month: JAN, 2019		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Pootkee Balihari Office (N16)	Industrial area	10.01.19	72.3	75
2	Pootkee Balihari Office (N16)	Industrial area	23.01.19	67.5	75
3	Moonidih UGP (N17)	Industrial area	14.01.19	67.6	75
4	Moonidih UGP (N17)	Industrial area	24.01.19	61.7	75
5	Moonidih Washery (N29)	Industrial area	14.01.19	68.5	75
6	Moonidih Washery (N29)	Industrial area	24.01.19	62.2	75
7	Kusunda OCP (N10)	Industrial area	02.01.19	55.7	75
8	Kusunda OCP (N10)	Industrial area	16.01.19	59.3	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.

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Analysed By
JSA/SA/SSA

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

21/1/19
Approved By
HOD(Mining/Environment)
RI-2, CMPDI, Dhanbad

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**ENVIRONMENTAL MONITORING REPORT
OF
BHARAT COKING COAL LIMITED,
CLUSTER –XI
(FOR THE MONTH FEBRUARY, 2019)**

E. C. no. J-11015/77/2011-IA.II (M) dated 26.08.2013-

CMPDI

ISO 9001 Company
Regional Institute-II
Dhanbad, Jharkhand

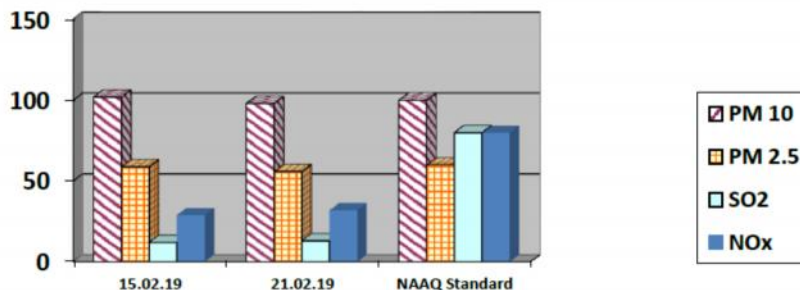
AMBIENT AIR QUALITY DATA

Cluster –XI, Bharat Coking Coal limited

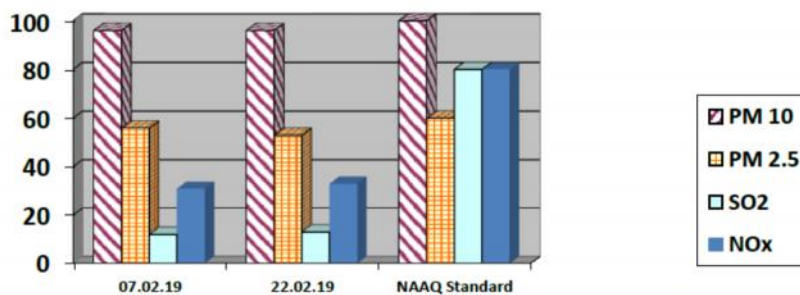
Month: FEB ,2019

Year : 2018-19.

StationNameA16-Pootkee Balihari office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	15.02.19	102	59	12	29
2	21.02.19	98	56	13	32
	NAAQ Standard	100	60	80	80



Station Name: A17- Moonidih UGP		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	07.02.19	96	56	12	31
2	22.02.19	96	53	13	33
	NAAQ Standard	100	60	80	80



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RI-2, CMPDI, Dhanbad

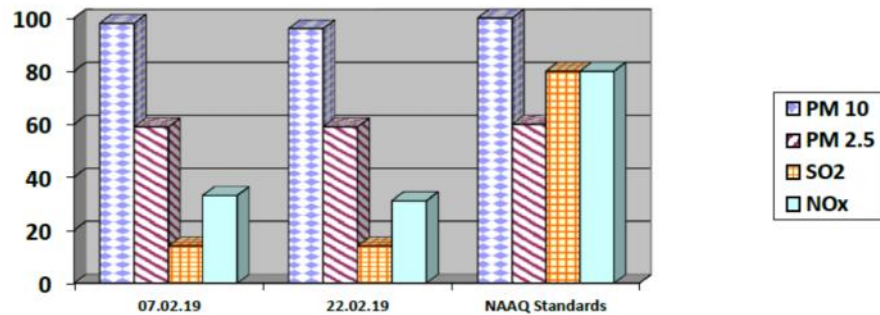
21/6/19

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

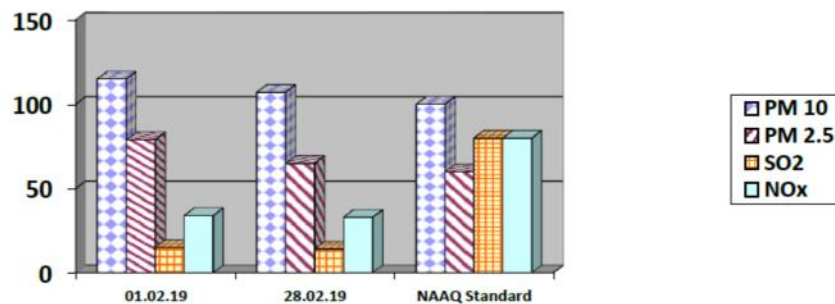
JOB NO. 200316028

Cluster –XI, BCCL Environmental Monitoring Report


Station Name: A29-Moonidih Washery		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	07.02.19	98	59	14	33
2	22.02.19	96	59	14	31
	NAAQ Standards	100	60	80	80




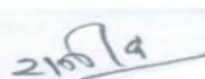
StationName: Kusunda OCP (A10)		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	01.02.19	115	79	15	34
2	28.02.19	107	65	14	33
	NAAQ Standard	100	60	80	80



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


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JOB NO. 200316028

Cluster -XI, BCCL Environmental Monitoring Report

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

1. Pootkee Balihari Office (N16)
2. Moonidih UGP (N17)
3. Moonidih Washery (N29)
4. Kusunda OCP (N10)

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).

4.2 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 -XI			Month: FEB, 2019		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Pootkee Balihari Office (N16)	Industrial area	15.02.19	72.8	75
2	Pootkee Balihari Office (N16)	Industrial area	21.02.19	67.8	75
3	Moonidih UGP (N17)	Industrial area	07.02.19	68.2	75
4	Moonidih UGP (N17)	Industrial area	22.02.19	60.8	75
5	Moonidih Washery (N29)	Industrial area	07.02.19	70.4	75
6	Moonidih Washery (N29)	Industrial area	22.02.19	62.3	75
7	Kusunda OCP (N10)	Industrial area	01.02.19	61.4	75
8	Kusunda OCP (N10)	Industrial area	28.02.19	56.4	75

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

* Day Time: 6.00 AM to 10.00 PM.

सुमन सेठी, रुद्र

Analysed By
JSA/SA/SSA

U

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

21/02/19

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

JOB NO. 200316028

Cluster -XI, BCCL Environmental Monitoring Report

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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 –XI
(FOR THE MONTH MARCH, 2019)**

E. C. no. J-11015/77/2011-IA.II (M) dated 26.08.2013-

CMPDI

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

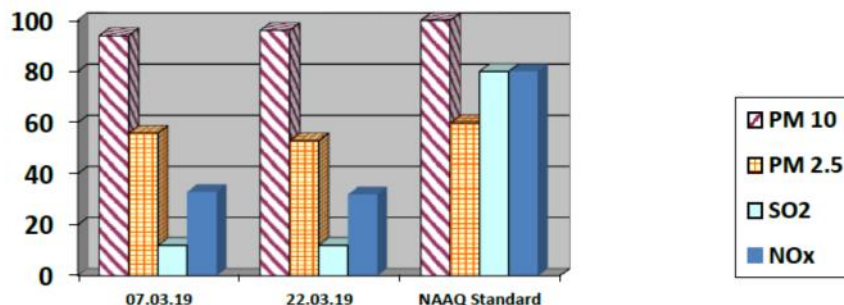
AMBIENT AIR QUALITY DATA

Cluster –XI, Bharat Coking Coal limited

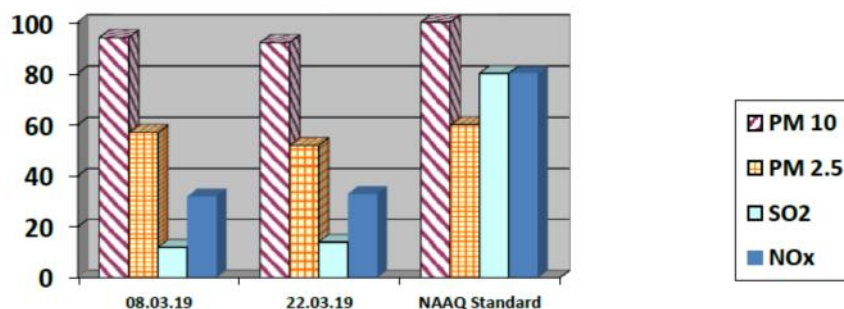
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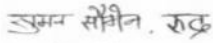
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StationNameA16-Pootkee Balihari office		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	07.03.19	94	56	12	33
2	22.03.19	96	53	12	32
	NAAQ Standard	100	60	80	80

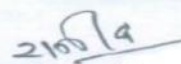


Station Name: A17- Moonidih UGP		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	08.03.19	94	57	12	32
2	22.03.19	92	52	14	33
	NAAQ Standard	100	60	80	80




 Analysed By
 JSA/SA/SSA

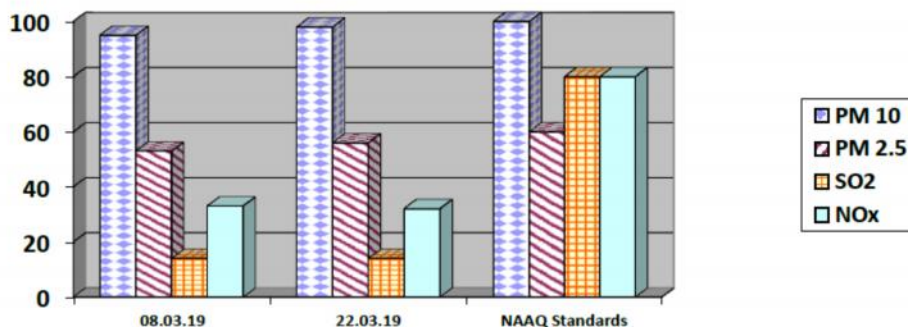

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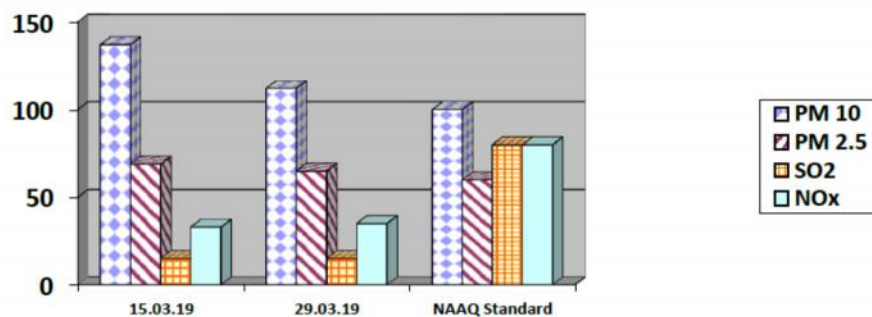
JOB NO. 200316028

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Station Name:A29-Moonidih Washery		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	08.03.19	95	53	14	33
2	22.03.19	98	56	14	32
	NAAQ Standards	100	60	80	80




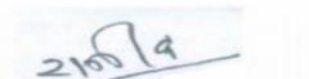
StationName: Kusunda OCP (A10)		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO ₂	NO _x
1	15.03.19	137	69	15	33
2	29.03.19	112	65	15	35
	NAAQ Standard	100	60	80	80



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


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 RI-2, CMPDI, Dhanbad


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 RI-2, CMPDI, Dhanbad

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites

1. Pootkee Balihari Office (N16)
2. Moonidih UGP (N17)
3. Moonidih Washery (N29)
4. Kusunda OCP (N10)

Methodology of sampling and analysis

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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 -XI			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	Pootkee Balihari Office (N16)	Industrial area	07.03.19	69.3	75
2	Pootkee Balihari Office (N16)	Industrial area	22.03.19	73.5	75
3	Moonidih UGP (N17)	Industrial area	08.03.19	66.2	75
4	Moonidih UGP (N17)	Industrial area	22.03.19	65.3	75
5	Moonidih Washery (N29)	Industrial area	08.03.19	61.4	75
6	Moonidih Washery (N29)	Industrial area	22.03.19	71.5	75
7	Kusunda OCP (N10)	Industrial area	15.03.19	60.6	75
8	Kusunda OCP (N10)	Industrial area	29.03.19	62.2	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.

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21/3/19

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

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Cluster -XI, BCCL Environmental Monitoring Report

ANNEXURE-XII

A. Training from (October'18 to March'19)
(As provided by Vocational Training Center)

No of employees (Departmental & Contractual) received training in Cluster XI (October'18 to March'19)	
Types of Training	Numbers
Initial Training	130
Refresher Training	222
Special Training	96

B. PME report for cluster XI from October'18 to March'19
(As provided by Safety Dept.)

PME from P.B. Area and W.J.Area under cluster XI	
PME from P.B. Area and W.J.Area	Numbers
Gopalichuck, Pootkee, Bhagabandh, KB 10-12, PBP colliery, Kustore regional hospital, etc.	431
Moonidih	118