



BHARAT COKING COAL LIMITED  
(A Subsidiary of Coal India Limited)  
OFFICE OF THE GENERAL MANAGER  
BLOCK-II AREA, PO-NAWAGARAH, DHANBAD-828306  
CIN:U10101JH1972GO1000918  
Tel. No-0326-2393108/Fax No-0326-2393108

Date: 28.11.2019

Ref: GM/B-II/19-20/

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


Sub: Six monthly EC compliance reports for the period from April 2019 to September 2019 in respect of Cluster –II group of mines of BCCL.

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

Dear Sir,

Kindly find enclosed herewith the Six monthly EC compliance report for the period from April 2019 to September 2019 in respect of Cluster –II group of mines of BCCL. Hope you will find the same in order.

Yours faithfully,


  
General Manager  
Block-II Area  
28.11.19


Encl: as above



C.C to

1. The Director, 1A monitoring cell  
Paryavaran Bhawan CGO Complex, New Delhi-110003
2. The Regional Officer, JSPCB, HIG- I, Housing colony  
Dhanbad-826001
3. Dy.G.M (Env.) BCCL Koyla Bhawan, Dhanbad.

**ENVIRONMENTAL CLEARANCE COMPLIANCE OF CLUSTER-II MINING AREA OF BCCL**  
**(GRANTED VIDE: J-11015/35/2011-IA II (M) dated 06.02.13**  
**(01.04.2019 to 30.09. 2019)**

Sl. no.	A. Specific Conditions by MOEF:	Compliance				
i	The maximum production by opencast mining shall not exceed beyond that for which environmental clearance has been granted for the 5 mine of Cluster- II .	The production from the Cluster is within limit for which environment clearance has been granted.				
		Mine Cluster II	Coal (MTPA)	2016-17	2017-18	2018-19
				6.99	6.73	5.97
ii	The measure to identify in the Environmental Plan for Cluster- II groups of mine and the conditions given in this environmental clearance letter shall be dovetailed to the implementation of the Jharia Action Plan.	Master Plan is dovetailed with environmental clearance condition. Action like trench cutting & water flushing is being taken to control, mine fires including old OB dump & areas as specified in Jharia Master Plan				
iii	The proponent shall prepare time -series maps of the Jharia Coalfields through NRSA to monitor and prevent fire problems in the Jharia Coalfields by Isothermal mapping /imaging and monitoring temperatures of the coal seams (whether they are close to spontaneous ignition temperatures) and based on which, areas with potential fire problems shall be identified. Measures to prevent ingress of air (Ventilation) in such areas, to prevent restart fresh/spread fires in other areas including in mines of cluster II shall be undertaken. Expertise available internationally could also be utilized for control of fire in Jharia Coalfields and for their reclamation and to further minimize time for fire and subsidence control. Monitoring of fire should be carried out regularly.	Time -series maps of the Jharia Coalfields is prepared by NRSA for 2012 &17 and will continue. As per study conducted by NRSA, the western flank (Shatabdi and Muraidih) show diminished fire presence compared to 2012.  (Soft copy of NRSA report is enclosed as Annexure-D)				
iv	Underground mining should be taken up after completion of reclamation of Opencast mine area.	It shall be complied. Presently only Open Cast working is being practiced.				
v	The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilized with plantation so as to withstand the peak water flow and prevent mine inundation.	Strong stony embankment is present along river & nalla flowing nearby. 				
vi	The rejects of washeries in Cluster –II should be send to FBC based plant.	No washery is present in cluster.				
vii	No mining shall be undertaken where underground fires continue. Measure shall be taken to prevent/ check such fire including in old OB dump areas where the fire could start due to presence of coal /shale with sufficient carbon content.	Mining is being carried out as per the guidelines of DGMS. Sufficient precaution like trench cutting and water flushing is being taken to guard against fire.				
viii	There shall be no external OB dumps. OB produce from the whole cluster will be 484.89Mm <sup>3</sup> . OB from 3 OCP and 2 patches in mixed mine shall be backfilled. At the end of the mining there shall be no void and the entire mined out area shall be re-vegetated. Areas where opencast mining was carried out and completed shall be reclaimed immediately thereafter.	OB produced is used in back-filling. Quantity backfilled in 2018-19 was 11.55 Mm <sup>3</sup> . Ecological restoration practices is being carried out at the stable OB dumps from where coal has been extracted Completely and grass seed are also spread on the slopes of the dumps for slope stability.				

ix	A detailed calendar plan of production with plan for OB dumping and backfilling (for OC mines) and reclamation and final mine closure plan for each mine of cluster-II shall be drawn up and implemented.	Calendar plan has been prepared. Mine closure plan as per the guidelines of Ministry of Coal have been prepared by Central Mine Planning and Design Institute (CMPDI) and it is being implemented. Calendar plan of Cluster -II for next 3 yrs is:- <table><tr><td></td><td>2019-20</td><td>2020-21</td><td>2021-22</td></tr><tr><td>Coal(MTe)</td><td>7.3</td><td>7.96</td><td>7.97</td></tr><tr><td>OB (Backfilling)</td><td>13.5</td><td>16.00</td><td>16.00</td></tr></table>		2019-20	2020-21	2021-22	Coal(MTe)	7.3	7.96	7.97	OB (Backfilling)	13.5	16.00	16.00
	2019-20	2020-21	2021-22											
Coal(MTe)	7.3	7.96	7.97											
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x	Mining shall be carried out as per statute from the streams/nalas flowing within the lease and maintaining a safe distance from the Nalas flowing along the lease boundary. A safety barrier of a minimum 60m width shall be maintained along the nalas/water bodies. The small water bodies in OC shall be protected to the extent feasible and the embankment proposed along water body shall be strengthened with stone pitching taking into account the highest flood level, based on past data, so as to guard against mine inundation. The slope of the embankment shall at least 2:1 towards the ML. The height of the embankment shall be at least 3 m higher than the HFL. The embankment to be constructed by OB /solid waste shall be strengthened with stone pitching. Slope stability of the embankment shall be done by planting suitable grass and shrubs using native species selected from the study area.	It is being followed. More than 60 m distance is being maintained from nearby river/nalla. Strong stony embankment with plantation is present along river/Nalla. <div></div> The height of the embankment of Jamunia river is 8 m higher than the HFL												
xi	Active OB dumps near water bodies and rivers should be re-handled for backfilling abandoned mine voids. However, those which have been biologically reclaimed need not be disturbed.	There is no active OB dumps near water bodies and rivers.												
xii	Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation. A total area of 1237.48ha shall be reclaimed and afforested.	It is being complied. Total area of 79.40 ha has been planted.A total area of 76.15 ha is being eco-restored since 2014-15.												
xiii	The road should be provided with avenue plantation on both side as trees act as sink of carbon and other pollutant.	In this monsoon, 1000 no of saplings along permanent transportation roads (250m length both side) of mines was planted. 2 nos. of Plantation sites are present along road(approx 400 m) connecting mine to state govt road and also there are 2-3 plantation site along permanent road in mines. Most of the coal is being transported through railway siding .Road transport is being carried out through existing network of NH/SH where avenue plantation already exist.												

		 								
xiv	Specific mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted area and relevant for Cluster- II shall be implemented.	Dhanbad Action Plan is being implemented. The salient actions of this area: <div><div>1. Covered transportation of Coal.</div><div>2. Water sprinkling.</div><div>3. Plantation.</div><div>4. Utilization of surplus mine water.</div></div>								
xv	The locations of monitoring stations in the Jharia Coalfields should be finalized in consultation with the Jharkhand State Pollution Control Board. The Committee stated that smoke/dust emission vary from source to source (fuel wood, coal, fly ash from TPPs, silica from natural dust, etc) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM <sub>10</sub> and PM <sub>2.5</sub> ) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.	Establishment of ambient environment quality monitoring stations has been finalized with the consultation of Jharkhand State Pollution Control Board. The work of source apportionment was awarded to NEERI, Nagpur on 12.05.2018. The reconnaissance survey has started on 24.09.2018. Result is awaited.								
xvi	The Transportation Plan for conveyor-cum-rail for Cluster-II should be dovetailed with Jharia Action Plan. Road transportation of coal during Phase-I should be by mechanically covered trucks, which should be introduced at the earliest.	CMPDIL RI-II has been requested to conduct study and prepare the plan in this regarding. No OEM is provided for mechanically covered trucks, transportation is being done by covering vehicle with tarpaulin.								
xvii	R&R of 1137 nos of PAF's involved. They should be rehabilitated at cost of Rs 45.08 Crores as per the approved Jharia Action Plan.	Implementation of master plan has already been started through Jharkhand Rehabilitation and Development Authority, Dhanbad. Survey of affected site by JRDA has done.								
xviii	Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.	Groundwater level and quality is being regularly monitored by CMPDIL.  Tender has been cancelled thrice. The estimate is being revised in association with CMPDI for re-tendering.  Water level monitoring at 5 hydrograph 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: <table><tr><td>Sl</td><td>Well</td><td>Location</td><td>Water level (bgl in meters)</td></tr><tr><td></td><td>1</td><td></td><td></td></tr></table>	Sl	Well	Location	Water level (bgl in meters)		1		
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xix	Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.	As the area is having O/C mines, hence no subsidence is there.																																																	
xx	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.	Presently only OCP working exist.																																																	
xxi	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	As the area is having O/C mines, hence no subsidence is there.																																																	
xxii	Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.	As the area is having O/C mines, hence no subsidence is there.																																																	
xxiii	Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.	As the area is having O/C mines, hence no subsidence is there.																																																	
xxiv	No depillaring operation shall be carried out below the township/colony.	Presently only OCP working exist in this cluster.																																																	
xxv	A detailed CSR Action Plan shall be prepared for Cluster II group of mines. Specific activities shall be identified for CSR for the budget of Rs 77.50 Lakhs per year@ Rs 5/T of coal provided for CSR for 2012-2013 and Rs. 5/T of coal as recurring expenditure. The 416.98 ha of area within Cluster II ML existing as waste land and not being acquired shall be put to productive use under CSR and developed with fruit bearing and other useful species for the local communities. In addition to afforesting 1237.48	<p>BCCL is implementing CSR activities, as per Govt. norms with a CSR Committee being evaluated by Tata Institute of Social Science.</p> <p>Rs. 191.67 lakhs spend for Construction and maintenance of toilets for 5 years in Government schools in Gumla District under Swachh Vidyalaya Abhiyan. 125 toilets in 69 schools were constructed.</p>																																																	


	ha of area at the post-mining stage, the 122.18ha of fallow/abandoned land and 416.98 ha waste land /barren land within Cluster- II mining lease area shall be rehabilitated/reclaimed as forest/agricultural land under CSR Plan in consultation with local communities. Third party evaluation shall be got carried out regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integrated with activities being taken up under CSR. The details of CSR undertaken along with budgetary provisions for the village-wise various activities and expenditure thereon shall be uploaded on the company website every year. The company must give priority to capacity building both within the company and to the local youth, who are motivated to carry out the work in future.	All welfare/ CSR activities are also uploaded in Company web site.  Work undertaken as per issue raised(Road, electricity, water availability, pond creation & cleaning etc) is given in Annexure III  (Expenditure under CSR is given in CSR Booklet enclosed as Annexure III)								
xxvi	Details of transportation, CSR, R&R and implementation of environmental action plan for the clusters-II should be brought out in a booklet form within a year and regularly updated.	Booklet form is being maintained. (Soft copy of booklet is enclosed as Annexure III.) Environmental action plan is formulated and implementation is initiated. ( Soft copy of Environmental action plan is enclosed as Annexure X.)								
xxvii	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.	Mine discharge water is being allowed to settle down in the mine sumps and is being used for domestic purpose after treatment through Pressure Filter. Regular monitoring of Water Quality Parameters is being carried out by CMPDIL and reports are being uploaded regularly on company website. Max. value of parameters of mine discharge is given in the table below: <table><tr><td>Total Suspended Solids</td><td>68</td></tr><tr><td>pH</td><td>8.13</td></tr><tr><td>Oil &amp; Grease</td><td>&lt; 2</td></tr><tr><td>COD</td><td>56</td></tr></table> (Soft copy of monitoring report is enclosed as Annexure IV)	Total Suspended Solids	68	pH	8.13	Oil & Grease	< 2	COD	56
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xxviii	No groundwater shall be used for the mining activities. Additional water required, if any, shall be met from mine water or by recycling/reuse of the water from the existing activities and from rainwater harvesting measures. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry to dewatering of mine.	It is being complied and mine water is being used for the industrial purpose. Further mine water is also utilized for the community and irrigation purposes. Following action has been taken by the Company: 1. Utilization of surplus mine water for irrigation, pisciculture purpose.								
xxix	The void shall be converted into a water reservoir of a maximum depth of 15-20 m and shall be gently sloped and the upper benches of the reservoir shall be stabilised with plantation and the periphery of the reservoir fenced. The abandoned pits and voids should be backfilled with OB and reclaimed with plantation and or may be used for pisciculture.	. The void will be converted into the water body as specified in EMP at the end of the mining.								


xxx	Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be dome 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.	<p>Groundwater level and quality is being regularly monitored by CMPDIL.</p> <p>Water level monitoring at 5 hydrograph stations has been done in the months of February, April, August &amp; November'2018 and the Ground water level data is enclosed in the table below:</p> <table><tr><th rowspan="2">Sl No .</th><th rowspan="2">Wel 1 No.</th><th rowspan="2">Location</th><th colspan="4">Water level (bgl in meters)</th></tr><tr><th>Feb'18</th><th>Apr'18</th><th>Aug'18</th><th>Nov'18</th></tr><tr><td>1</td><td>B-1</td><td>Muraidih</td><td>1.68</td><td>2.88</td><td>1.48</td><td>2.08</td></tr><tr><td>2</td><td>B-59</td><td>Khodoval y</td><td>1.38</td><td>5.47</td><td>0.90</td><td>1.10</td></tr><tr><td>3</td><td>B-60</td><td>Bahiyardi h</td><td>8.21</td><td>13.68</td><td>3.13</td><td>4.23</td></tr><tr><td>4</td><td>B-61A</td><td>Kesargor a</td><td>1.27</td><td>2.57</td><td>2.62</td><td>2.02</td></tr><tr><td>5</td><td>B-62A</td><td>Sadiyardi h</td><td>5.87</td><td>8.27</td><td>4.00</td><td>4.78</td></tr><tr><td colspan="3"><b>Average WL (bgl)</b></td><td><b>3.68</b></td><td><b>6.57</b></td><td><b>2.43</b></td><td><b>2.84</b></td></tr></table> <p>(Soft copy of report is enclosed as Annexure II)</p>	Sl No .	Wel 1 No.	Location	Water level (bgl in meters)				Feb'18	Apr'18	Aug'18	Nov'18	1	B-1	Muraidih	1.68	2.88	1.48	2.08	2	B-59	Khodoval y	1.38	5.47	0.90	1.10	3	B-60	Bahiyardi h	8.21	13.68	3.13	4.23	4	B-61A	Kesargor a	1.27	2.57	2.62	2.02	5	B-62A	Sadiyardi h	5.87	8.27	4.00	4.78	<b>Average WL (bgl)</b>			<b>3.68</b>	<b>6.57</b>	<b>2.43</b>	<b>2.84</b>
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xxxi	ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to confirm to prescribe standards in case discharge into the natural water course.	Oil & grease Trap for workshop is provided																																																					
xxxii	The location of monitoring stations in the Jharia coalfield should be finalized in consultation with Jharkhand State Pollution Control Board.	The location of monitoring stations in the Jharia Coalfield has been finalized with the Jharkhand State pollution Control Board.																																																					
xxxiii	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 50000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhubaneswar.	<p>Presently a time series map of vegetation cover in the Jharia Coal Field is being carried out through CMPDI, Ranchi using satellite imagery for every 3 years &amp; it has been uploaded on the official website of company.</p> <p>Also CIL issued a work order to CMPDI for monitoring of land reclamation status of all the OC coal mines having production capacity of more than 5MM<sup>3</sup> /Annum(coal+ OB) regularly on annual basis and for monitoring of less than 5 MM<sup>3</sup> / Annum at an interval of 3 years ,based on remote sensing satellite data for sustainable development of mining. This study reveals that during 2018-19, out of the two project of Cluster II viz. Block-II and Muraidih (having production</p>																																																					

		<p>capacity of more than 5MM<sup>3</sup> /Annum(coal+ OB)), having total mine leasehold area of 16.32 Km<sup>2</sup>; total excavated area is only 5.65 Km<sup>2</sup> of which 0.68 Km<sup>2</sup> area ( 12.04%) has been f planted, 3.80 Km<sup>2</sup> area (67.26%) is under backfilling and 1.17 Km<sup>2</sup> area (20. 71 % ) is under active mining. It is evident from the analysis that 79.29% area of the OC projects has come under reclamation and balance 20.71 % area is under active mining. and balance 17.05% area is under active mining.</p> <p>(Soft copy of land reclamation report is enclosed as Annexure V)</p>
xxxiv	<p>A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment &amp; 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.</p>	<p>BCCL is being depositing the amount in ESCROW account as specified in the progressive mine closure Plan.</p> <p>A Final Mine Closure Plan along with details of Corpus Fund will be submitted to the Ministry of Environment &amp; Forests five year before mine closure for approval.</p> <p>Native species (Sheesham,sirish,Arjuna,grass etc) are being used in mine reclamation.</p> <p>(Details of amount deposited enclosed as Annexure VI)</p>
xxxv	<p>A separate management structure for implementing environment policy and socio-economic issues and the capacity building required in this regard.</p>	<p>A full-fledged Environment cell, with a suitable qualified multidisciplinary team of executives has been established. GM (Environment) at head quarter level, co-ordinates with all the Areas and reports to the Director (Technical) and in turn he reports to the CMD of the company.</p> <p>Socio economic issues and capacity building are being evaluated by Tata Institute of Social Science.</p>
xxxvi	<p>(A) Corporate Environment Responsibility:</p>	



	<p>a)The Company shall have a well laid down Environment Policy approved by the Board of Directors.</p> <p>b)The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.</p> <p>c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.</p> <p>d)To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.</p>	<p>A well defined Corporate Environment Policy has already been laid down and approved by the Board of Directors. This is also posted on BCCL website.</p> <p>Complied.</p> <p>A hierarchical system of the company to deal with environmental issues from corporate level to mine level already exists.</p> <p>Being complied.</p>
<b>B</b>	<b>General Conditions by MOEF:</b>	
i	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	Mining is being done by shovel-dumper combination.
ii	No change in the calendar plan of production for quantum of mineral coal shall be made.	Noted.
iii	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg,As,Ni,Cd,Cr ,etc carried out at least once in six months.	<p>The location of monitoring stations in Jharia Coal Field has been finalized in consultation with the Jharkhand State Pollution Control Board. Ambient air quality along with heavy metals such as Hg ,As, Ni, Cd, Cr ,etc is carried out at least once in six months by CMPDIL.</p> <p>(Soft copy of monitoring report is enclosed as Annexure IV)</p>
iv	Data on ambient air quality (PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> Hg,As,Ni,Cd,Cr and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognized under the EPA rules,1986 shall be furnished as part of compliance report.	<p>Data on ambient air and other monitoring data is being regularly submitted to the Ministry &amp; Pollution Control Board along with compliance report.</p> <p>(Soft copy of report is enclosed as Annexure IV)</p>
v	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	<p>Noise level varies from 47.7dBA (Block-II OCP) to 63.1 dBA (Madhuband Washery) .</p> <p>Regular maintenance of vehicles and other machineries are being practiced for control of noise level.</p> <p>Ear plugs/muffsare provided (83 Nos in 2018-19) to the persons engaged in blasting and drilling operations, operation of HEMM, etc .</p> <p>(Soft copy of monitoring report is enclosed. as Annexure IV)</p>

vi	<p>Industrial waste water (workshop and waste water from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May 1993 and 31<sup>st</sup> December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.</p>	<p>Oil and grease trap is installed for treatment of Workshop effluents.</p>  <p>(Oil &amp; Grease trap)</p> <p>Excess mine water is being stored at old quarries and ponds for community use. This will help to recharge the ground water.</p>
vii	<p>Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.</p>	<p>Regular pollution under control check-up is being done. Regular maintenance of vehicle is being practiced to keep vehicular emission under control. Coal is being transported in tarpaulin covered trucks. (Pollution under control certificate of vehicles are enclosed as Annexure VII)</p>
viii	<p>Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analyzed through a laboratory recognized under EPA Rules, 1986.</p>	<p>It is being done by CMPDIL, Ranchi having NABL accreditation.</p>
ix	<p>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.</p>	<p>582 Nos. of dust masks was provided in 2018-19 to personnel working in dusty areas . Vocational training center under separate Human Resource Development Deptt. is conducting regular training programme on these issues. More than 400 nos of employee got training at VTC Barora from June 19 to Sept 19. ( Training list enclosed as Annexure VIII)</p>

x	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.	Initial Medical Examination (IME) and Periodical Medical Examination (PME) of all the personnel are carried out as per the Statutes and Director General of Mines Safety (DGMS) guideline. Medical examination of outsourcing Manpower is also being done.
xi	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	A full-fledged Environment cell, with a suitable qualified multidisciplinary team of executives has been established. 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. Socio economic issues and capacity building are being evaluated by Tata Institute of Social Science.
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.	Separate head "plantation", & "environment" is there for recurring expenditure and used for eco-restoration , environmental protection measures, statutory payments etc. Rs.9.67 lakhs incurred on plantation end eco-restoration. (Excluding the cost of manpower & Diesel(5-6 crore.) consumed in water spraying tanker which is)
xiii	The project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	It has been complied. Advertisement in local newspaper has been given. 
xiv	A copy of the environmental clearance letter shall be marked to concern Panchayat/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.	Being complied. Clearance letter has been displayed on Company web site. Also Clearance letter has been sent to Mukhiya of different Panchayat. (Soft copy of letters are enclosed as Annexure IX)
xv	A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30	Complied.

	days	
xvi	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.	Clearance letter has been displayed on Company web site and updated regularly. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>x</sub> (ambient) and critical sectoral parameters is being displayed at the entrance of the project premises and Area office.
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 submitted.
xviii	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.	Noted.
xix	The Environmental statement for each financial year ending 31 March in For -V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF by E-mail	Being submitted on time.

General Manager  
Barora Area

*Sanjay*  
28/11/19

*Sanjay*  
28/11/19

General Manager  
Block-II Area

*Sanjay*  
28/11/19



**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**

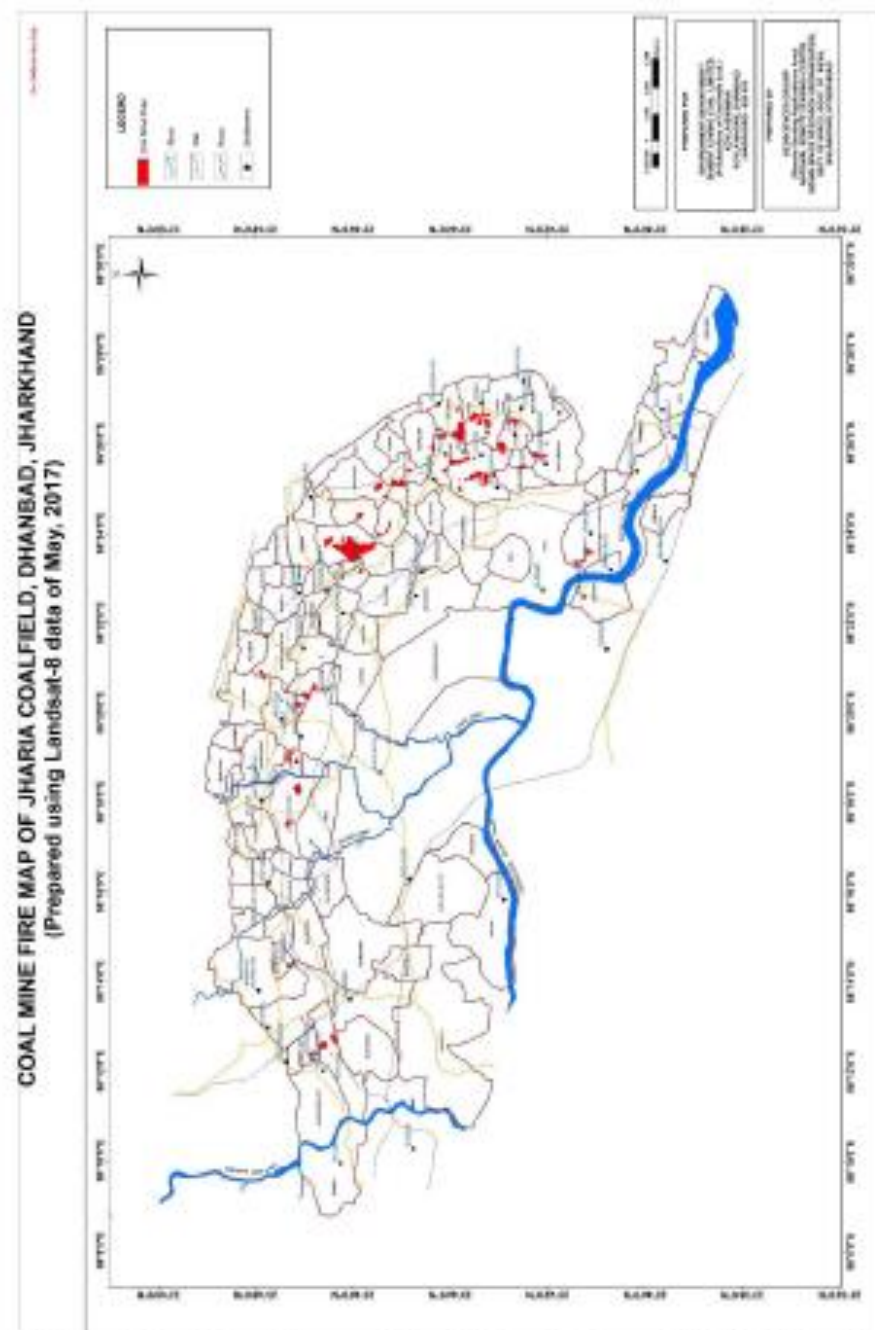


Figure 5: Coal mine fire map (May, 2017) of Iharia coal field, Dhanbad. The fire areas shown in this map have been verified in the field as per field points in figure 13.

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	KORIDIH BLOCK-IV OCP	0.0000	0.0000	0.000	NO FIRE
13	JOGIDIH	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-CHOITUDIH	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	GONDUDIH	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	GOLUCKDIH	0.0301	0.1122	0.082	INCREASE
40	KUJAMA	0.0398	0.2404	0.201	INCREASE

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	HURRILADIIH&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	PATHERDIIH	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	MURULIDIIH 20/21 PIT	0.0000	0.0000	0.000	NO FIRE
57	MURULIDIIH	0.0000	0.0000	0.000	NO FIRE
58	BHATDIIH	0.0000	0.0000	0.000	NO FIRE
59	LOHAPATTY	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	KENDUADIIH	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	MUDIDIIH	0.1141	0.1104	-0.004	DECREASE
71	W. MUDIDIIH	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	MOONIDIIH PROJECT	0.0000	0.0000	0.000	NO FIRE
75	E.BHUGGATDIIH	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.

# **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**

### 3.3 B Monitoring of Ground Water Levels of Cluster-II

Cluster-II consists of seven mines namely; Block-II mixed mine (OCP & UGP), Jamunia OCP, Shatabdi OCP, Muraidih mixed mine (OCP & UGP) and Phularitand OCP is under administrative control of Block-II Area and Barora Area of BCCL. It is located in the extreme western part of Jharia Coalfield in Dhanbad district of Jharkhand.

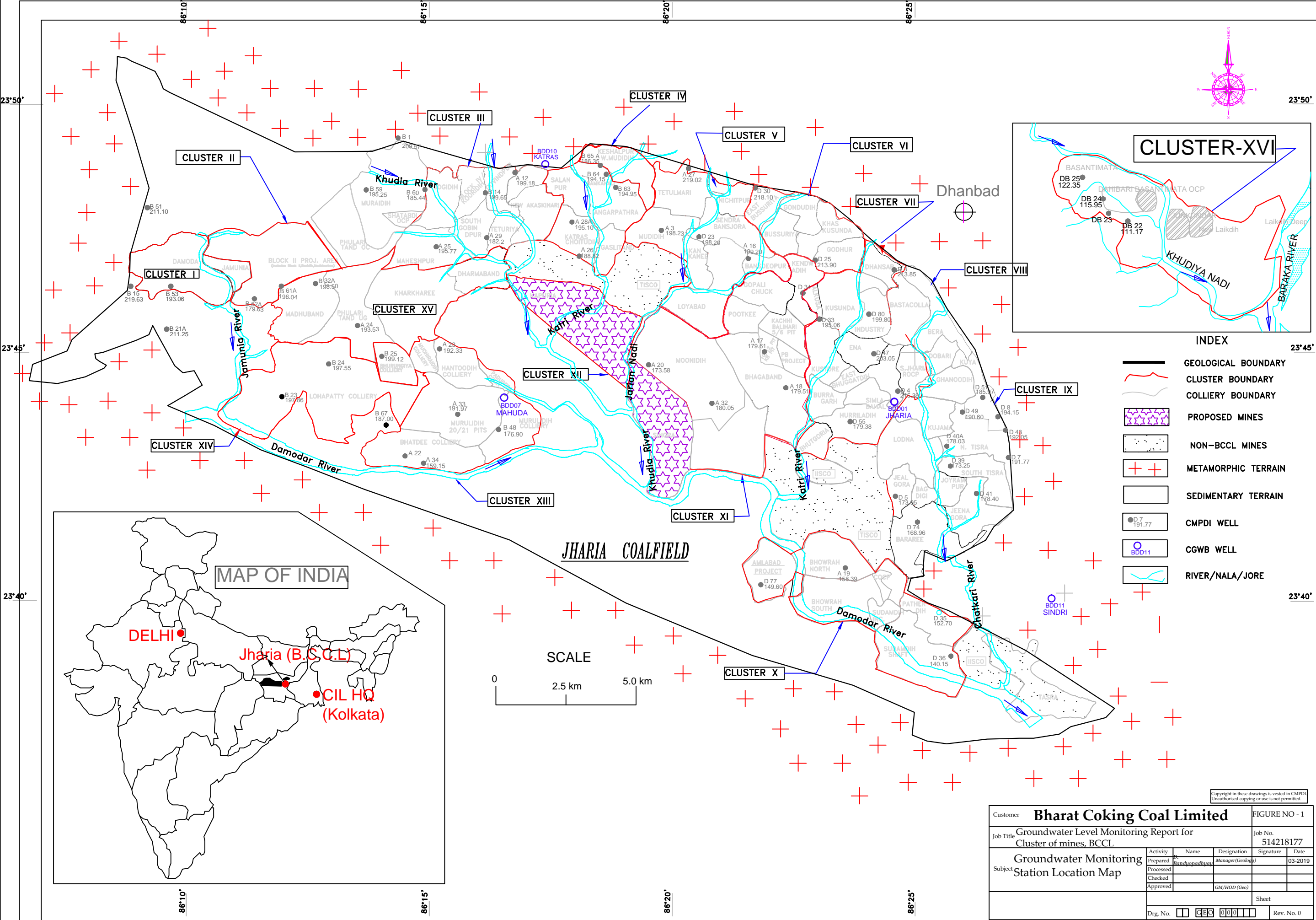
The present leasehold area of Cluster-II is 2025.71 Ha. The Damoda block area is marked by more or less flat and gently undulating topography. The RL varies from 176 m to 235 m AMSL. Jamuniya River, Khudia River and its tributaries are controlling the drainage system of the area. The area comes under the watershed of Jamuniya River and Khudia River.

5 hydrograph stations (**B-1, B-59, B-60, B-61A and B-62A**) 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:

Sl No.	Well No.	Location	Water level (bgl in meters)			
			Feb'18	Apr'18	Aug'18	Nov'18
1	B-1	Muraidih	1.68	2.88	1.48	2.08
2	B-59	Khodovaly	1.38	5.47	0.90	1.10
3	B-60	Bahiyardih	8.21	13.68	3.13	4.23
4	B-61A	Kesargora	1.27	2.57	2.62	2.02
5	B-62A	Sadiyardih	5.87	8.27	4.00	4.78
<b>Average WL (bgl)</b>			3.68	6.57	2.43	2.84

Ground Water Level (in bgl) varies from 1.27 to 8.21 m during February, 2.57 to 13.68 m during April, 0.90 to 4.00 m during August and 1.10 to 4.78 m during November within the Core Zone of Cluster-II area.

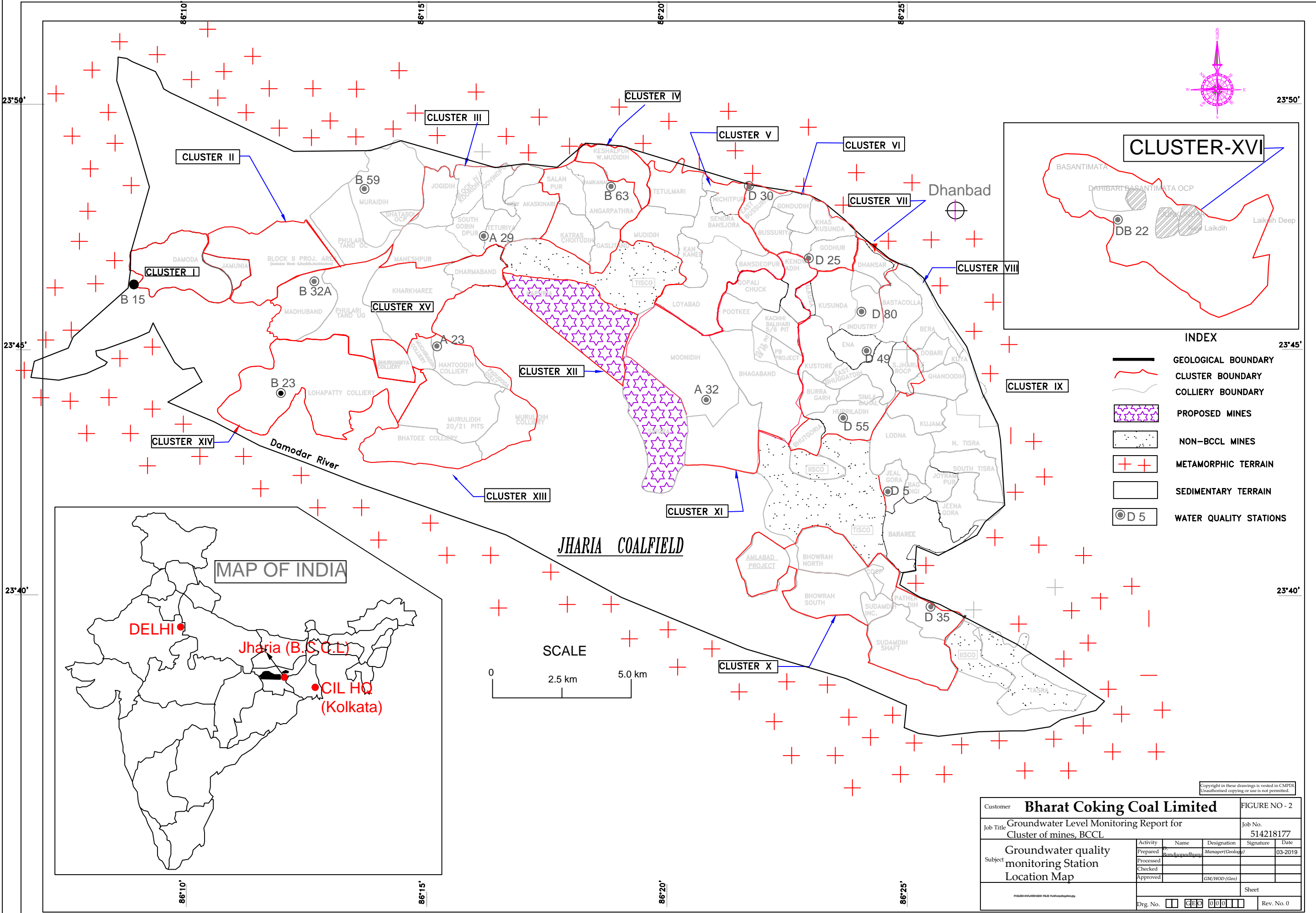
GROUNDWATER MONITORING STATION LOCATION MAP



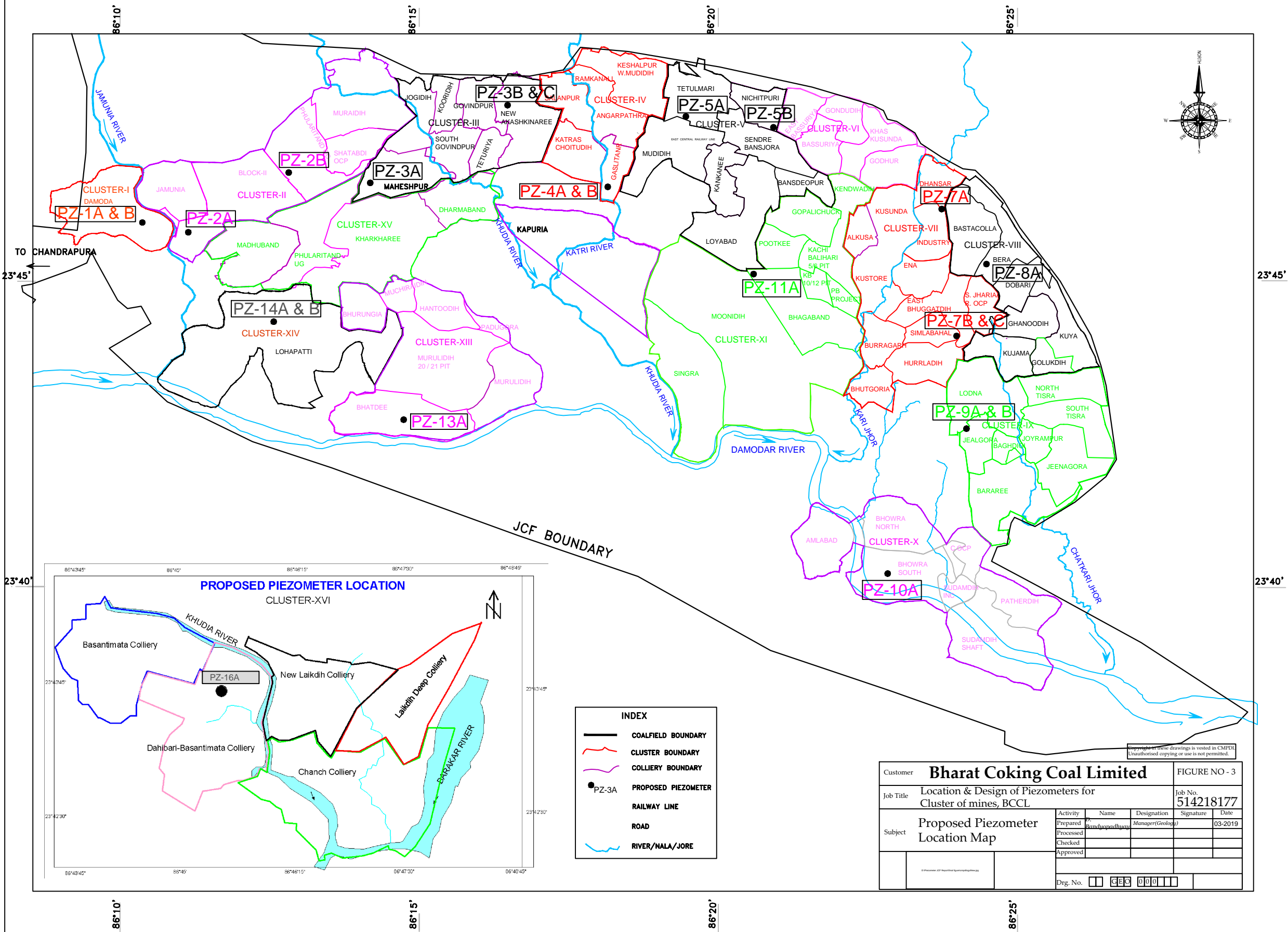
Customer		Bharat Coking Coal Limited				FIGURE NO - 1	
Job Title		Groundwater Level Monitoring Report for Cluster of mines, BCCL				Job No. 514218177	
Subject	Groundwater Monitoring	Activity	Name	Designation	Signature	Date	
	Station Location Map	Prepared	R. Banthapadhyay	Manager(Geology)		03-2019	
		Processed					
		Checked					
		Approved		GM/HOD (Geo)			
						Sheet	
		Drg. No. 0000000000				Rev. No. 0	



GROUNDWATER QUALITY MONITORING STATION LOCATION MAP

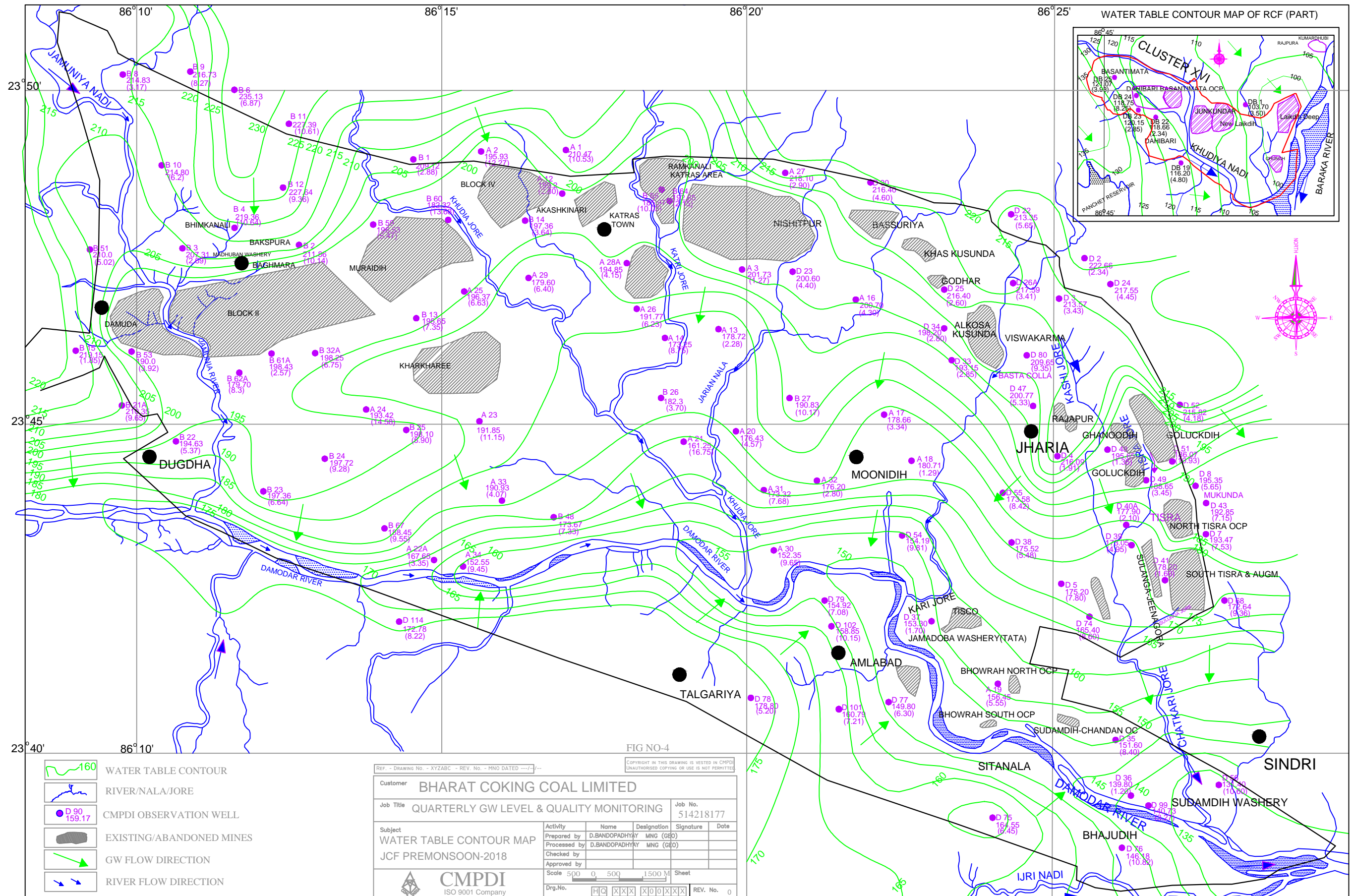


PROPOSED PIEZOMETER LOCATION MAP, JCF & RCF (part)



Customer		Bharat Coking Coal Limited			FIGURE NO - 3
Job Title		Location & Design of Piezometers for Cluster of mines, BCCL			Job No. 514218177
Subject	Proposed Piezometer	Activity	Name	Designation	Signature
	Location Map	Prepared	B. Bandyopadhyay	Manager (Geology)	
		Processed			
		Checked			
		Approved			
		Drg. No. 000000			

## WATER TABLE CONTOUR MAP OF RCF (PART)







# CSR Booklet

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## Cluster-II

### **Bharat Coking Coal Limited**

As per EC condition ( Specific Condition : 27) The Details of transportation, CSR, R&R and implementation of environmental action plan for the clusters-II should be brought out in a booklet form within a year and regularly updated.

## Contents

1.0 INTRODUCTION .....	2
2.0 SCOPE .....	2
3.0 SOURCE OF FUND .....	2
4.0 ACTION PLAN FOR CORPORATE SOCIAL RESPONSIBILITY .....	3
5.0 STATUS OF CSR ACTIVITIES .....	3
5.1 Medical Camps .....	3
5.2 Health Awareness Programme .....	3
5.3 CSR Clinics.....	3
5.4 Civil work under CSR.....	5
6.0 COAL TRANSPORTATION PLAN.....	7
7.0 REHABILITATION AND RESETTLEMENT PLAN .....	9



## 1.0 INTRODUCTION

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

## 2.0 SCOPE

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

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

## 3.0 SOURCE OF FUND

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

#### 4.0 ACTION PLAN FOR CORPORATE SOCIAL RESPONSIBILITY

When the EC was granted, it was estimated as per prevailing policy, 5% of the retained earnings of the previous year subject to minimum of Rs. 5 per tonne of coal production of the previous year will be provided for Corporate Social Responsibility (CSR).

#### 5.0 STATUS OF CSR ACTIVITIES

##### 5.1 Medical Camps:

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

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

###### (B) During FY 2015-16:

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

**(C) During FY 2016-17:**

SN	Month	Beneficiaries	Amount (in Rs.)
1	May 16	243	13463.00
2	Nov 16	352	16857.00
	<b>Total</b>	<b>595</b>	<b>30320.00</b>

**(D) During FY 2017-18: NIL****(D) During FY 2018-19:**

SN	Month	Particulars	Beneficiaries
1	OCT 18	Health check up camp, Kumhartola	195
2	FEB 19	Mega Health check up camp, Nishchitpur	495
3	FEB 19	National Deworming camp, RH Baghmara	99
	<b>Total</b>	<b>595</b>	<b>30320.00</b>

**5.2 Health Awareness Programme:****(A) During 2014-15:**

SN	Date	Activities	Amount (in Rs.)
1	25.04.2014	Nasa Mukti Abhiyan	10000.00
2	06.06.2014	Blood Pressure Detection	5000.00
4	30.07.2014	Aids Awareness Programme	5000.00
5	20.11.2014	Eye Checkup camp	25000.00

**5.3 CSR Clinics :**

SN	Month	Beneficiaries 2014-15	Beneficiaries 2015-16	Beneficiaries 2016-17	Beneficiaries 2017-18
1	April	121	115	307	113
2	May	112	101	70	98
3	June	137	152	164	115
4	July	153	132	260	161
5	August	101	120	149	127
6	September	531	109	139	169
7	October	83	86	139	99
8	November	85	87	241	66
9	December	73	80	207	99
10	January	67	80	99	73
11	February	102	158	55	77

12	March	95	81	65	96
	<b>Total</b>	<b>1660</b>	<b>1301</b>	<b>1895</b>	<b>1293</b>

#### 5.4 Civil work under CSR:

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

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

	Pandeydih Village Under Block-II Area		persons in this locality
	Surplus mine water supply from Xth seam & Madhuban quarry of B-II Area Khonathi Pond	400	This is a multipurpose project to provide water for irrigation & other agricultural use along with maintaining water availability throughout the year along with developing a tourist destination in long run.

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

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

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

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



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

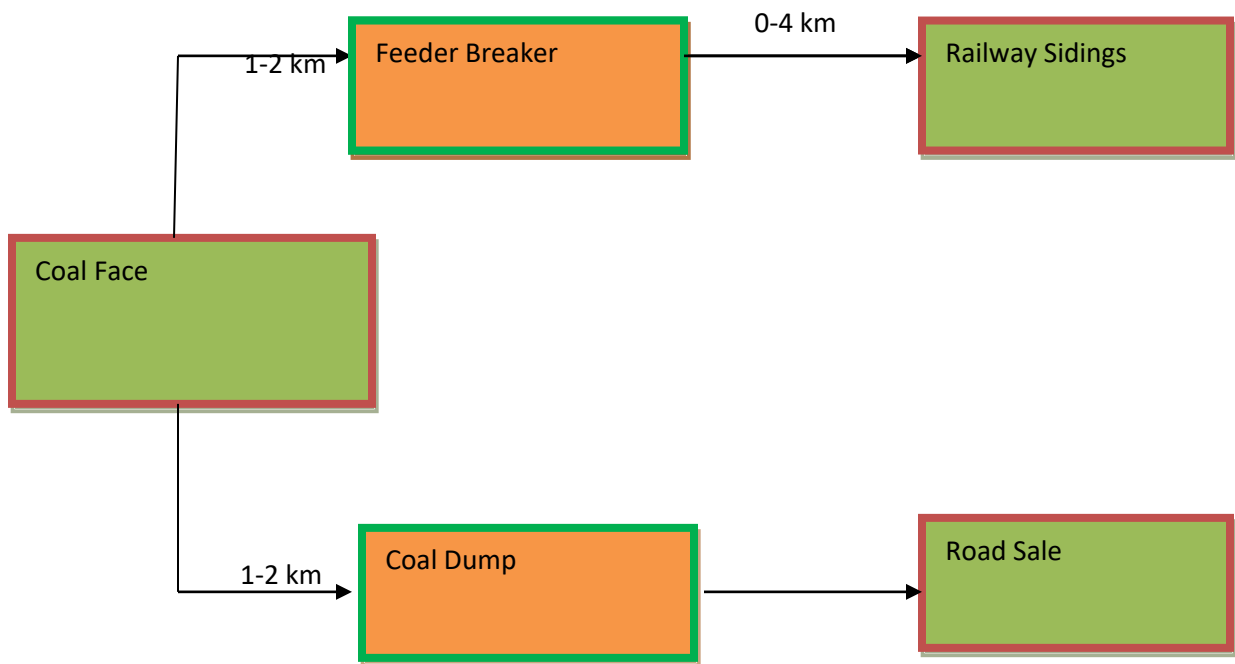


Fig: Coal transportation route



## 7.0 REHABILITATION AND RESETTLEMENT PLAN:

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

#### Preamble

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

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

In addition to compensation for land coal companies provide Rehabilitation and Resettlement (R&R) package for project affected persons to compensate for loss of livelihood. Apart from compensation for house site, house, trees, cow shed, cost of shifting etc., employment is also provided to land oustees. In addition to this, efforts are made to rehabilitate them by construction of houses, building roads, streets, schools, providing water etc. wherever feasible. However, demand for both more land compensation and better R&R package has been raised by project affected persons and has been highlighted in various Parliamentary Committees. Coal Companies often have to face representations and agitations by these land oustees who obstruct the smooth working of existing mines and come in the way of expansion of new projects.

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

- I -

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

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

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

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

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



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

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

### 3. SCOPE:

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

### 4. Definitions

(a) "**affected family**" means:

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

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

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

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



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

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

The rehabilitation action plan will address the following:

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

The RAP will be formulated in consultation with PAPs and State government.

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

**6. Eligibility Criteria -**

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

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

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

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

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

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

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

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

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

**8. Types of Compensation and Rehabilitation Entitlement**

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

**8.1 Eligibility and Compensation**

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

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

Category of Persons affected by the Project	Compensation and Rehabilitation entitlement option
	Provisions
	<p><b>A). Land Compensation</b> - Land compensation shall be paid as per the provisions of the concerned Act or State Govt. notification. Where no notification of the State Govt. is available the concerned subsidiary Board may decide on the rate of compensation keeping in view the compensation provided by the neighboring states. Authentication of land held under traditional rights by state authorities will be necessary.</p> <p>In addition to above Solatium will be paid as per provisions of the concerned Act / as imposed by the Concerned State Govt.</p> <p>Escalation of land compensation – Escalation will be paid as per provisions of the concerned Act / as imposed by the Concerned State Govt. or Escalation at the rate of 12% per anum for a maximum period of three years.</p> <p><b>(B): Employment provision:</b> Apart from payment of the land compensation, employment may be given in the following manner –</p> <ol style="list-style-type: none"> <li>1) The maximum total number of employments that may be provided to the land losers would be limited to the total no. of acres of land acquired divided by two. However employments will be released in proportion to the land possessed .</li> <li>2) For every two acres of land one employment can be considered;</li> <li>3) Subsidiaries of CIL may give an option to the Land losers having less than two acres of land to club together their land to the extent of two acres and nominate one of the land losers among the groups or their dependent for employment under package deal or employment under Descending order system by preparing the list of eligible land oustees in the descending order of land lost subject to the cut off equivalent to the total number of permissible employments or any other method with the approval of the respective Board of the subsidiary.</li> <li>4) The land loser must be a domiciled resident/Mool Niwasi and the certificate to this effect shall be issued by the concerned State Authority</li> <li>5) The modalities for offering employment shall be such as may be approved by the Board of the Subsidiary companies as per the unique conditions of the subsidiary provided that -             <ol style="list-style-type: none"> <li>a) The initial employment shall be given with pay of Category-I pay scale of NCWA, with training period of 6 months.</li> <li>b) In the seniority list, the seniority of the appointee should be reflected in appropriate manner in order to keep the senior most as senior.</li> <li>c) The land loser trainees shall be posted as per requirement, including underground duties.</li> </ol> </li> </ol>



Category of Persons affected by the Project	Compensation and Rehabilitation entitlement option
	Provisions
	<p><b>(C): Lumpsum Monetary Compensation –</b></p> <p>1. All the land losers who are not eligible for employment as above shall be entitled to receive monetary compensation in lieu of employment at the rate of Rs.5,00,000/- (Five Lakhs) for each acre of land on pro-rata basis .</p> <p>2. Land losers who are offered employment as per principle specified in point No ( 8.(i)B ) above will have the option either to opt for employment or to forego employment and opt for monetary compensation at the rate of Rs.5,00,000/- (Five lakhs) for each acre of land on pro-rata basis with minimum of Rs. 50,000 ( Fifty thousands) provided that the employment thus surrendered shall not be available for offer to any other person and will stand lapsed from the total sanctioned number of employments as specified in point No.( 8.(i)B1).</p> <p>3. The Land losers who have clubbed their land in Package Deal can claim employment for only one land loser of the clubbed two acres of land and remaining land losers of the package cannot claim either employment or lump sum monetary compensation in lieu of the land contributed by them.</p> <p>4. Annuity – All land losers who are entitled to get lump sum monetary compensation may opt for payment of compensation amount in the form of annuity made payable to the land losers monthly, annually or at such intervals (not less than one year) as may be opted for by him. The annuity be paid for a maximum period extending to 60 years of age or the life of the project for which the land has been acquired, whichever is earlier.</p> <p><b>Note:</b> A person receiving a job forgoes all claims to above compensation and a person receiving above compensation forgoes all claims to employment.</p>
(ii) Person whose homestead is acquired	<p>I. Compensation for homestead shall be paid as per the standard valuation method of the L.A Act. of the concerned State Govt.</p> <p>II. One time lump sum payment of Rs.3,00,000/- (three lakhs),shall be paid in lieu of alternate House site, Assistance in designing Shifting Allowance,compensation for construction of cattle shed , Monetary compensation for construction of work shed etc.The compensation shall be paid to displaced persons only after vacation and demolition of the homestead/ work shed etc.</p> <p>III. Subsistence allowance :Each affected displaced family will get subsistence allowance at the rate of 25 days (Minimum Agricultural Wage) per month for one year.</p>

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

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

- I. To approve the list of land losers and other PAPs;
- II. To approve the list of persons eligible to be offered employment as per R&R Policy;
- III. To approve the detailed Rehabilitation Plan for the project in consultation with the displaced persons and Gram Sabhas;
- IV. To expedite issue of domicile certificates and other necessary documentation required for State Authorities;
- V. To monitor and review the progress of the Rehabilitation Scheme, grant of benefits and handing over of possession of land in a smooth manner;
- VI. To facilitate the land acquisition process in any other manner as may be required including resolution of disputes;
- VII. To carry out post implementation social audit in consultation with the authorities.

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

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

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

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

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

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



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

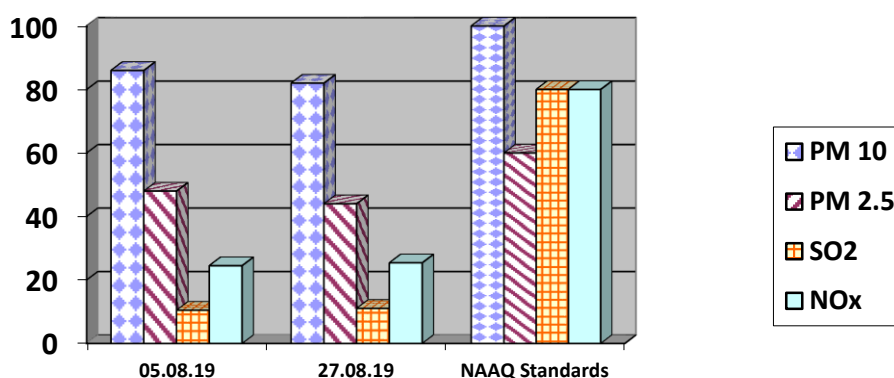
**13. Flexibility to the Subsidiary Companies** – The Subsidiary Companies Boards have been authorised to approve necessary modifications in the R&R Policy with reference to unique conditions prevailing at the concerned Subsidiaries as the policy is not exhaustive.

(The above list is only indicative and not exhaustive)

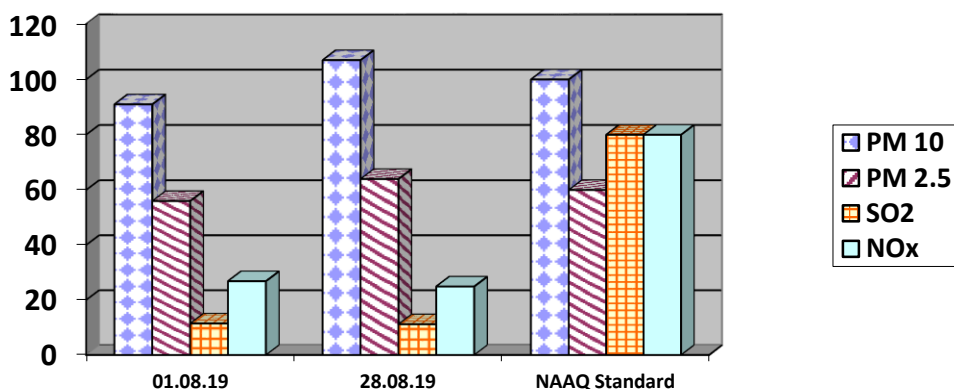
## AMBIENT AIR QUALITY DATA

**Cluster – II, Bharat Coking Coal limited**
**Month: AUG. 2019**
**Year : 2019-20.**


Station Name: A4 – Block II OCP		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	05.08.19	86	48	10.48	24.49
2	27.08.19	82	44	11.06	25.41
	NAAQ Standards	100	60	80	80



Station Name: A5, Muraidih OCP		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	01.08.19	91	56	11.45	26.84
2	28.08.19	107	64	11.17	24.9
	NAAQ Standard	100	60	80	80


**Note:**

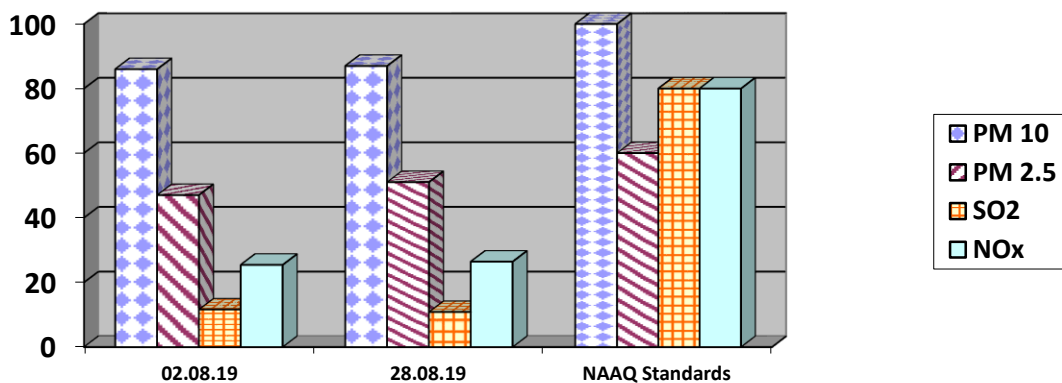
- All values are expressed in microgram per cubic meter.
- 24 hours duration

  
 Analysed By  
 JSA/SA/SSA

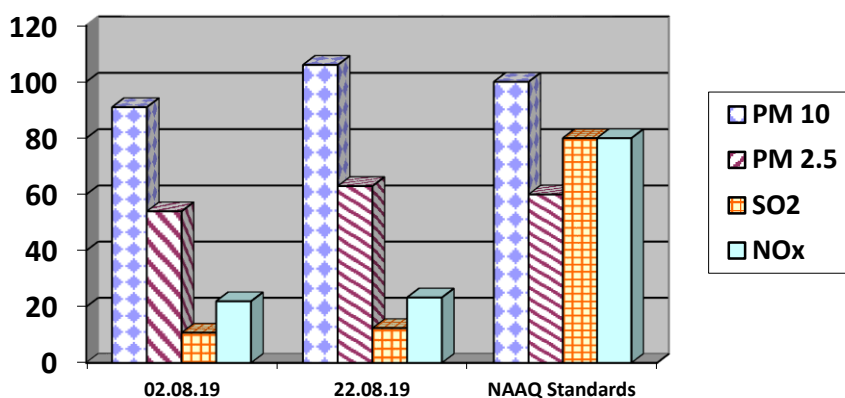
  
 Checked By  
 Lab In Charge  
 RI-2, CMPDI, Dhanbad

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

Station Name: A3 Madhuband Washery		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO2	NOx
1	02.08.19	86	47	11.62	25.41
2	28.08.19	87	51	10.84	26.4
	NAAQ Standards	100	60	80	80



Station Name: A33 Madhuband UGP		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO2	NOx
1	02.08.19	91	54	10.76	21.95
2	22.08.19	106	63	12.39	23.29
	NAAQ Standards	100	60	80	80



**Note:**

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

अमर सेठी, रुद्र  
Analysed By  
JSA/SA/SSA

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

21/8/19  
Approved By  
HOD(Mining/Environment)  
RI-2, CMPDI, Dhanbad

## WATER QUALITY MONITORING

### 3.1 Location of sampling sites

(Refer **Plate No. – II**)

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

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

### 3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analysed for four parameters on fortnightly basis 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: <b>Cluster -II</b>		Month: <b>AUG. 2019</b>	Name of the Station: <b>Mine Discharge of Block II OCP</b>	
Sl. No.	Parameters	<b>MW2</b> First Fortnight 06.08.2019	<b>MW2</b> Second Fortnight 17.08.2019	As per MOEF General Standards for schedule VI
1	Total Suspended Solids	50	68	100 (Max)
2	pH	7.99	7.86	5.5 - 9.0
3	Oil & Grease	<2.0	<2.0	10 (Max)
4	COD	32	36	250 (Max)

All values are expressed in mg/lit unless specified.

सुमन सेठी, रुद्र

Analysed By  
JSA/SA/SSA

J

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

21/8/19

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

## NOISE LEVEL QUALITY MONITORING

### 4.1 Location of sampling sites

- i) Block II OCP (N4)
- ii) Muraidih OCP (N5)
- iii) Madhuband Washery (N3)
- iv) Madhuband UGP (N33)

### 4.2 Methodology of sampling and analysis

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

### 4.3 Results & Interpretations

Ambient noise levels were recorded during day time and the observed values were compared with standards prescribed by MoEFCC. The results of Noise levels recorded during day time on fortnightly basis are presented in tabular form along with the applicable standard permissible limits. The observed values in terms of  $L_{EQ}$  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 -II			Month: AUG. 2019		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Madhuband Washery	Industrial area	02.08.19	63.1	75
2	Madhuband Washery	Industrial area	28.08.19	59.9	75
3	Block-II	Industrial area	05.08.19	49.7	75
4	Block-II	Industrial area	27.08.19	50.1	75
5	Muraidih	Industrial area	01.08.19	57.8	75
6	Muraidih	Industrial area	28.08.19	51.2	75
7	Madhuband UGP	Industrial area	02.08.19	55.3	75
8	Madhuband UGP	Industrial area	22.08.19	49.7	75

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

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

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Analysed By  
JSA/SA/SSA

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

21/8/19

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

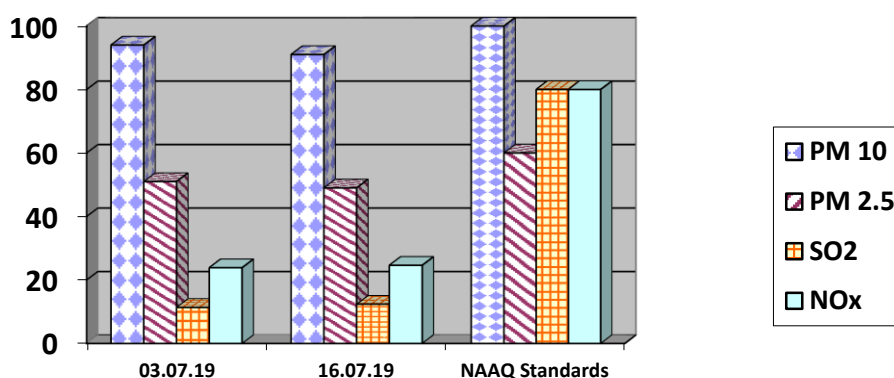
## AMBIENT AIR QUALITY DATA

Cluster – II, Bharat Coking Coal limited

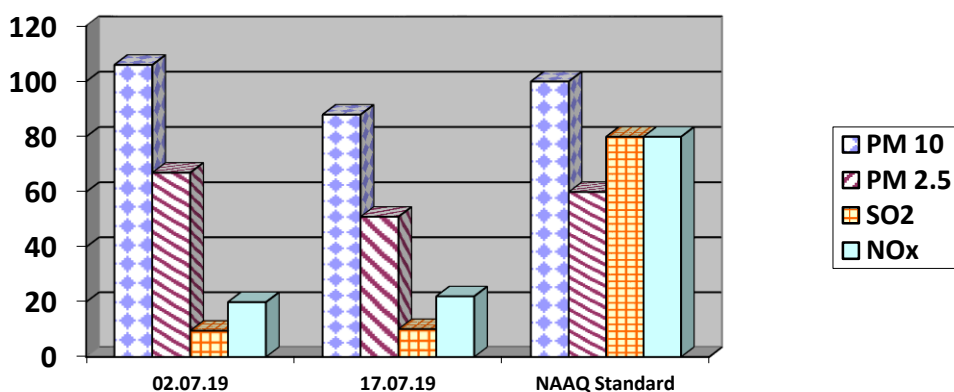
Month: JULY 2019

Year : 2019-20.

Station Name: A4 – Block II OCP		Zone: Core		Category: Industrial <sup>1</sup>	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	03.07.19	94	51	11.37	23.87
2	16.07.19	91	49	12.37	24.63
	NAAQ Standards	100	60	80	80



Station Name: A5, Muraidih OCP		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	02.07.19	106	67	9.54	19.93
2	17.07.19	88	51	10.16	22.04
	NAAQ Standard	100	60	80	80

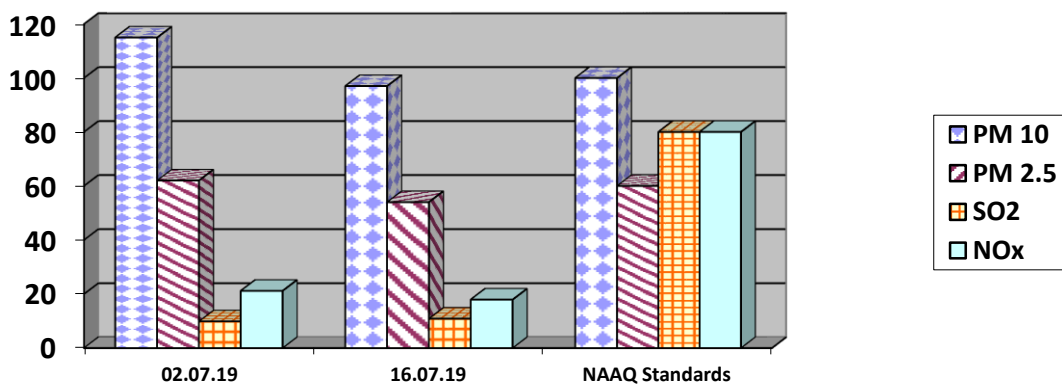


**Note:**

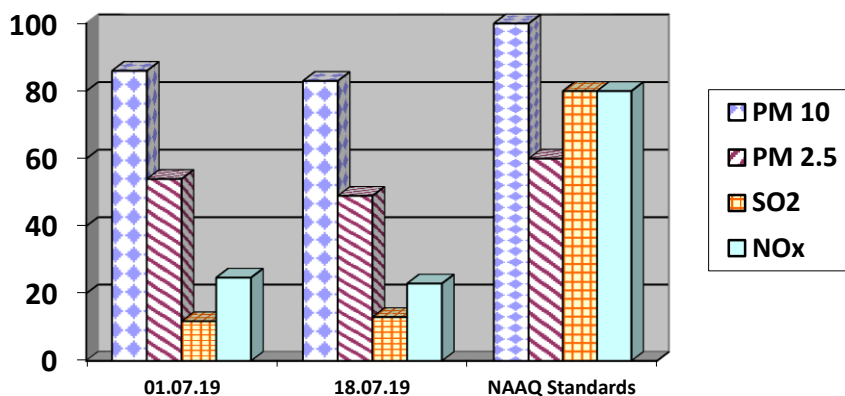
- All values are expressed in microgram per cubic meter.
- 24 hours duration



Station Name: A3 Madhuband Washery		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO2	NOx
1	02.07.19	115	62	9.88	21.16
2	16.07.19	97	54	10.90	17.93
	NAAQ Standards	100	60	80	80



Station Name: A33 Madhuband UGP		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO2	NOx
1	01.07.19	86	54	11.77	24.72
2	18.07.19	83	49	13.01	22.96
	NAAQ Standards	100	60	80	80



**Note:**

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

<sup>1</sup> AUTHORISED FOR RELEASE BY HOD (ENV), CMPDI, RL-2, DHANBAD,

DATED 28.09.19

## WATER QUALITY MONITORING

### 3.1 Location of sampling sites

(Refer **Plate No. – II**)

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

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

### 3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analysed for four parameters on fortnightly basis 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: <b>Cluster -II</b>		Month: <b>JULY, 2019</b>	Name of the Station: <b>Mine Discharge of Block II OCP<sup>2</sup></b>	
<b>Sl. No.</b>	<b>Parameters</b>	<b>MW2</b>	<b>MW2</b>	<b>As per MOEF General Standards for schedule VI</b>
		First Fortnight 04.07.2019	Second Fortnight 17.07.2019	
1	Total Suspended Solids	43	42	100 (Max)
2	pH	8.1	7.98	5.5 - 9.0
3	Oil & Grease	<2.0	<2.0	10 (Max)
4	COD	52	56	250 (Max)

All values are expressed in mg/lit unless specified.

## NOISE LEVEL QUALITY MONITORING

### 4.1 Location of sampling sites

- i) **Block II OCP (N4)**
- ii) **Muraidih OCP (N5)**
- iii) **Madhuband Washery (N3)**
- iv) **Madhuband UGP (N33)**

### 4.2 Methodology of sampling and analysis

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

### 4.3 Results & Interpretations

Ambient noise levels were recorded during day time and the observed values were compared with standards prescribed by MoEFCC. The results of Noise levels recorded during day time on fortnightly basis are presented in tabular form along with the applicable standard permissible limits. The observed values in terms of L<sub>EQ</sub> are presented. The observed values at all the monitoring locations are found to be within permissible limits.

## NOISE LEVEL DATA

Name of the Project: <b>Cluster -II</b>			Month: <b>JULY, 2019<sup>3</sup></b>		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Madhuband Washery (N3)	Industrial area	02.07.19	61.2	75
2	Madhuband Washery	Industrial area	16.07.19	61.2	75
3	Block-II(N4)	Industrial area	03.07.19	47.7	75
4	Block-II	Industrial area	16.07.19	51.1	75
5	Muraidih(N5)	Industrial area	02.07.19	56.9	75
6	Muraidih	Industrial area	17.07.19	52.9	75
7	Madhuband UGP (N33)	Industrial area	01.07.19	57.4	75
8	Madhuband UGP	Industrial area	18.07.19	52.1	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,*

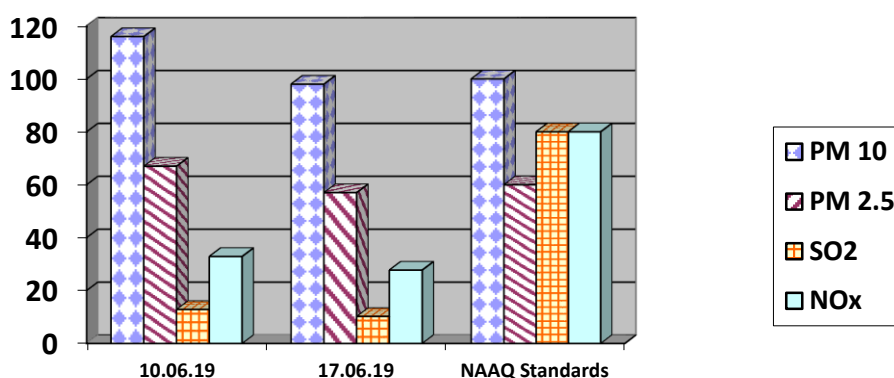
## AMBIENT AIR QUALITY DATA

Cluster – II, Bharat Coking Coal limited

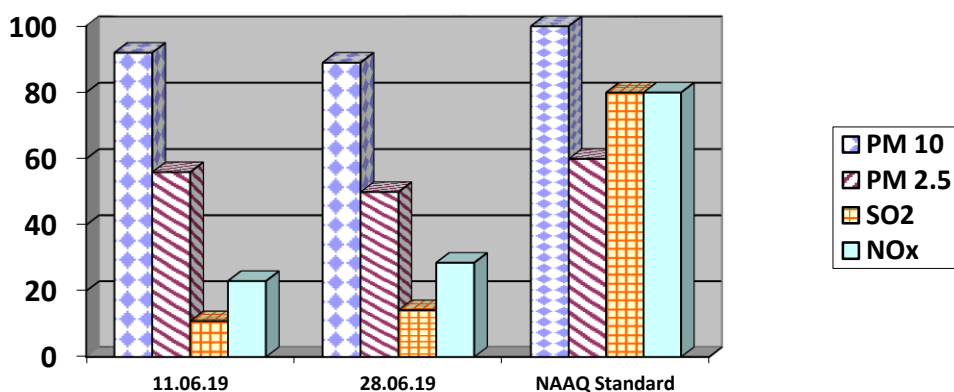
Month: JUNE 2019

Year : 2019-20.

Station Name: A4 – Block II OCP		Zone: Core		Category: Industrial <sup>1</sup>	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	10.06.19	116	67	12.86	32.88
2	17.06.19	98	57	10.22	27.73
	NAAQ Standards	100	60	80	80



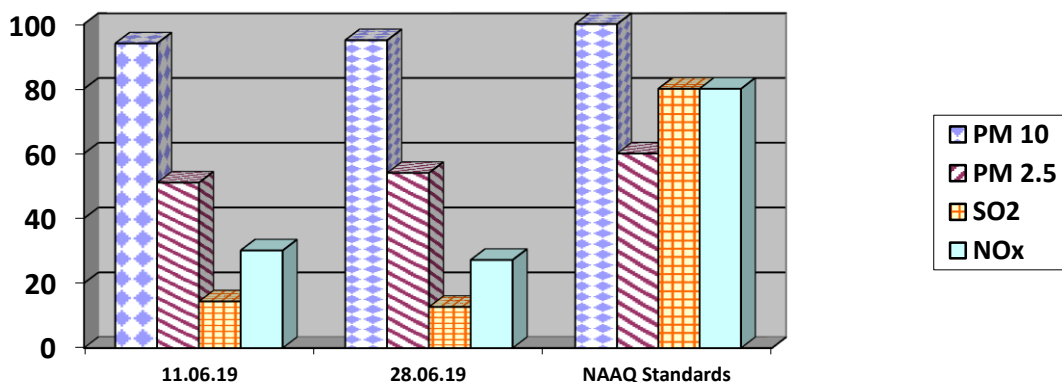
Station Name: A5, Muraidih OCP		Zone: Core		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
1	11.06.19	92	56	10.86	23.01
2	28.06.19	89	50	14.18	28.56
	NAAQ Standard	100	60	80	80



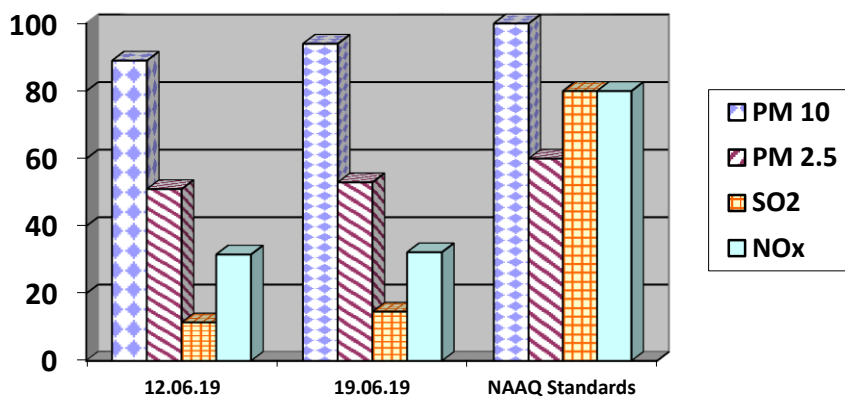
**Note:**

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

Station Name: A3 Madhuband Washery		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO2	NOx
1	11.06.19	94	51	14.38	30.09
2	28.06.19	95	54	12.67	27.17
	NAAQ Standards	100	60	80	80



Station Name: A33 Madhuband UGP		Zone: Buffer		Category: Industrial	
Sl. No.	Dates of sampling	PM 10	PM 2.5	SO2	NOx
1	12.06.19	89	51	11.42	31.58
2	19.06.19	94	53	14.62	32.24
	NAAQ Standards	100	60	80	80



**Note:**

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

<sup>1</sup> AUTHORISED FOR RELEASE BY HOD (ENV), CMPDI, RL-2, DHANBAD,

DATED 20.08.19



## WATER QUALITY MONITORING

### 3.1 Location of sampling sites

(Refer **Plate No. – II**)

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

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

### 3.2 Methodology of sampling and analysis

Water samples were collected as per standard practice. The effluent samples were collected and analysed for four parameters on fortnightly basis 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: <b>Cluster -II</b>		Month: <b>JUNE, 2019</b>	Name of the Station: <b>Mine Discharge of Block II OCP<sup>2</sup></b>	
<b>Sl. No.</b>	<b>Parameters</b>	<b>MW2</b>	<b>MW2</b>	<b>As per MOEF General Standards for schedule VI</b>
		First Fortnight 10.06.2019	Second Fortnight 18.06.2019	
1	Total Suspended Solids	34	21	100 (Max)
2	pH	8.13	8.07	5.5 - 9.0
3	Oil & Grease	<2.0	<2.0	10 (Max)
4	COD	44	48	250 (Max)

All values are expressed in mg/lit unless specified.

## NOISE LEVEL QUALITY MONITORING

### 4.1 Location of sampling sites

- i) **Block II OCP (N4)**
- ii) **Muraidih OCP (N5)**
- iii) **Madhuband Washery (N3)**
- iv) **Madhuband UGP (N33)**

### 4.2 Methodology of sampling and analysis

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

### 4.3 Results & Interpretations

Ambient noise levels were recorded during day time and the observed values were compared with standards prescribed by MoEFCC. The results of Noise levels recorded during day time on fortnightly basis are presented in tabular form along with the applicable standard permissible limits. The observed values in terms of L<sub>EQ</sub> are presented. The observed values at all the monitoring locations are found to be within permissible limits.

## NOISE LEVEL DATA

Name of the Project: <b>Cluster -II</b>			Month: <b>JUNE, 2019<sup>3</sup></b>		
Sl. No.	Station Name/Code	Category of area	Date	Noise level dB(A)LEQ	*Permissible Limit of Noise level in dB(A)
1	Madhuband Washery (N3)	Industrial area	11.06.19	57.2	75
2	Madhuband Washery	Industrial area	28.06.19	62.3	75
3	Block-II(N4)	Industrial area	10.06.19	62.6	75
4	Block-II	Industrial area	17.06.19	49.7	75
5	Muraidih(N5)	Industrial area	11.06.19	66.3	75
6	Muraidih	Industrial area	28.06.19	54.9	75
7	Madhuband UGP (N33)	Industrial area	12.06.19	58.6	75
8	Madhuband UGP	Industrial area	19.06.19	50.6	75

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

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

## AMBIENT AIR QUALITY DATA

Name of the Company: **Bharat Coking Coal Limited** Year : **2018-19<sup>1</sup>**.

Name of the Cluster : **Cluster -II** PERIOD: **Q. E. DECEMBER- 2018.**

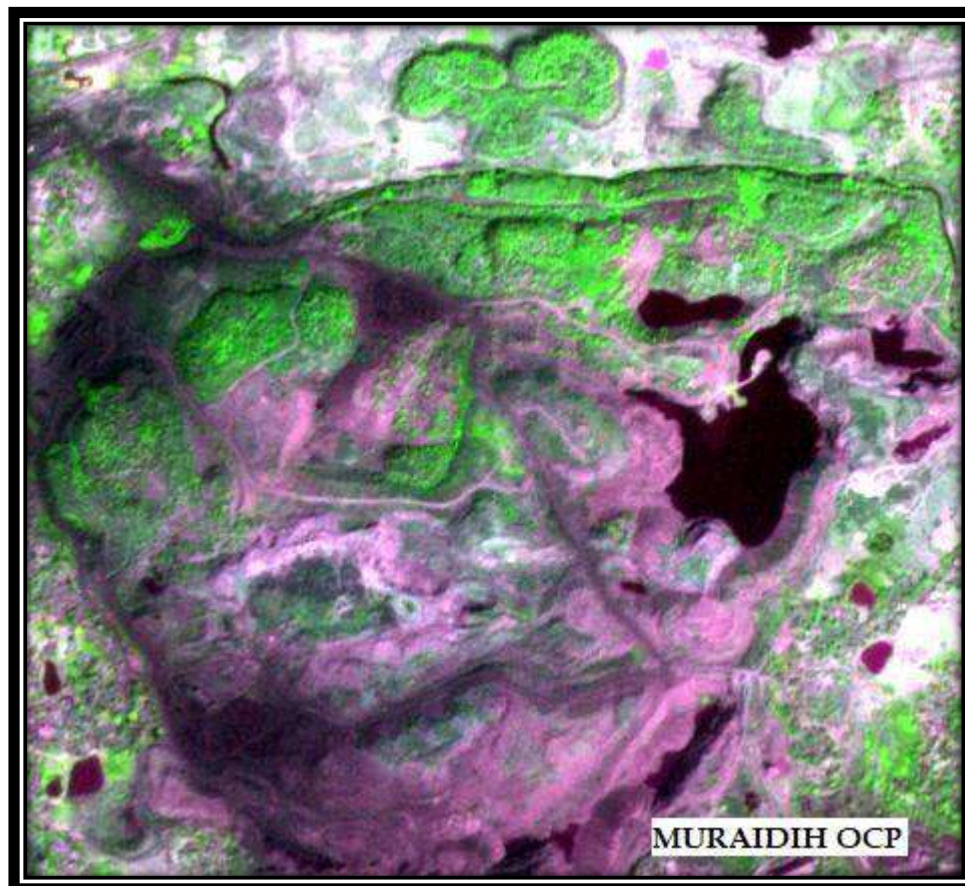
**AREA:** Block-II OCP

**Project:** Block-II  
OCP

### Heavy Metal Analysis report of Ambient Air Quality

SAMPLE	Cadmium(Cd) (µg/m3)	Mercury(Hg) (µg/m3)	Arsenic(As) (ng/m3)	Chromium(Cr) (µg/m3)	Nickel (Ni) (ng/m3)	Lead (Pb) (µg/m3)
<b>Madhuband Washery (A3)</b>	<0.001	<0.001	<0.005	<0.01	<0.1	0.07
<b>Block II OCP (A4):</b>	<0.001	<0.001	<0.005	<0.01	<0.1	0.05
<b>Muraidih OCP (A5):</b>	<0.001	<0.001	<0.005	<0.01	<0.1	0.09
<b>Madhuband UGP (A33)</b>	<0.001	<0.001	<0.005	<0.01	<0.1	0.02

**Land Restoration / Reclamation Monitoring of more than 5 million  
cu. m (Coal+OB) Capacity Open Cast Coal Mines of Bharat Coking  
Coal Limited Based on Satellite Data of the Year 2018**



*Submitted to*  
**Bharat Coking Coal Limited**



*cmpdi*  
*A Mini-Ratna Company*

**Land Restoration / Reclamation Monitoring of more than 5 million cu. m  
(Coal+OB) Capacity Opencast Coal Mines of Bharat Coking Coal  
Limited based on Satellite Data of the Year- 2018**

March-2019



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



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## **Executive Summary**

- 1.0 Project** Land restoration / reclamation monitoring of two opencast coal mines of Bharat Coking Coal Ltd. (BCCL) producing 5 million cu. mtr and more (Coal+OB) per year based on satellite data, regularly on annual basis.
- 2.0 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.
- 3.0 Salient Findings**
- Out of the total mine leasehold area of 16.32 Km<sup>2</sup> of the two projects viz. Block-II and Muraidih, which were considered for monitoring during 2018-19; total excavated area is only 5.65 Km<sup>2</sup> of which 0.68 Km<sup>2</sup> area (12.04%) has been planted, 3.80 Km<sup>2</sup> area (67.26%) is under backfilling and 1.17 Km<sup>2</sup> area (20.71%) is under active mining. It is evident from the analysis that 79.29% area of the OC projects has come under reclamation and balance 20.71% area is under active mining. Project wise details are given in Table-1 & Fig -1.
  - On comparing the status of land reclamation for the year 2018 with respect to the year 2017, it is evident from the analysis that the area of land reclamation has increased from 4.28 Km<sup>2</sup> (Yr. 2017) to 4.48 Km<sup>2</sup> (Yr. 2018). This increase of an area of 0.20 Km<sup>2</sup> in land reclamation is the result of the efforts of the coal company taken up towards environmental protection. Of the two projects of BCCL considered for monitoring, Block - II has achieved land reclamation of (73.58%) and Muraidih has (86.64%).

Table-1  
Status of Land Reclamation in Bharat Coking Coal Limited based on Satellite Data for the Year 2018  
(Projects producing more than 5 mcm of Coal+OB annually)

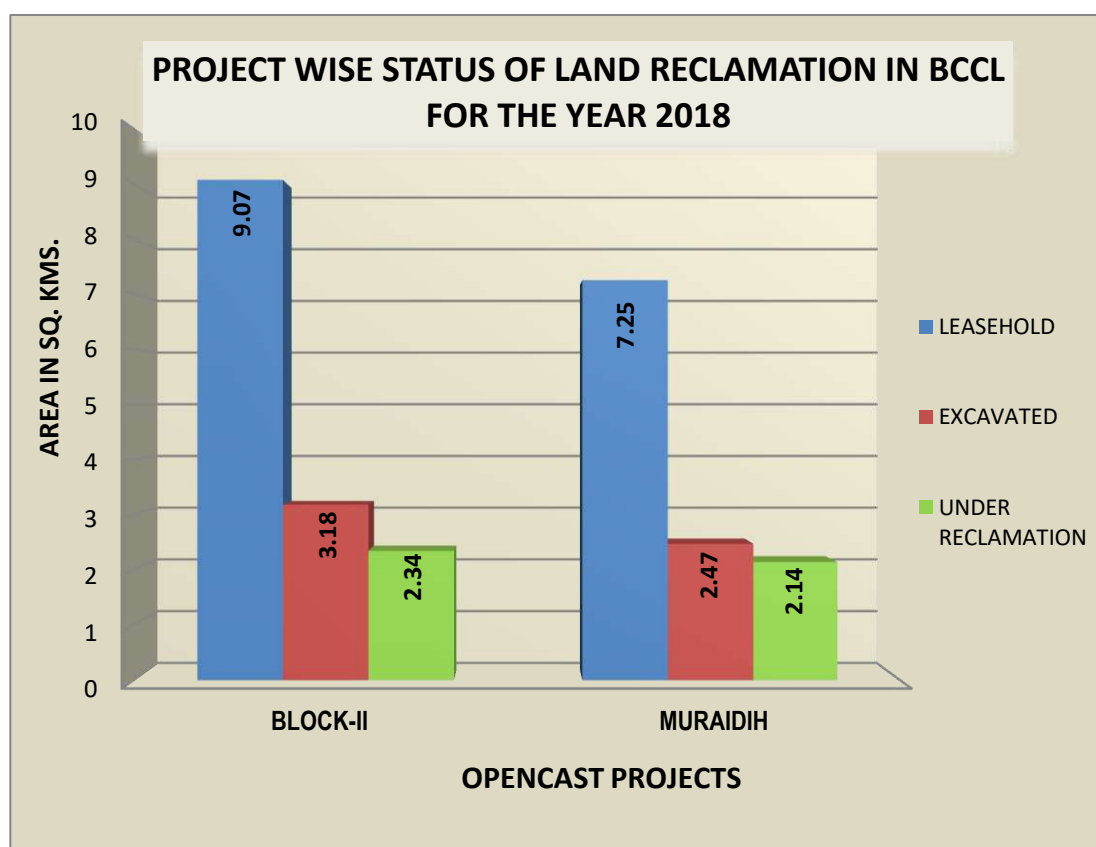
(Area in Sq. Kms.)

Sl. No.	Project	Total Leasehold Area	Technical Reclamation		Plantation						Area under Active Mining		Total Excavated Area		Total Area under Plantation (% Green Cover Generated in Leasehold)		Total Area under Reclamation	
					Biological Reclamation		Other Plantations											
			Area under Backfilling		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)	
			2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
1	Block-II	9.07	2.15	2.18	0.13	0.16	0.04	0.10	0.57	0.57	0.50	0.84	2.78	3.18	0.74	0.83	2.28	2.34
			77.34%	68.55%	4.68%	5.03%					17.99%	26.42%			8.16%	9.15%	82.01%	73.58%
2	Muraidih	7.25	1.56	1.62	0.44	0.52	0.27	0.27	0.31	0.31	0.38	0.33	2.38	2.47	1.02	1.10	2.00	2.14
			65.55%	65.59%	18.49%	21.05%					15.97%	13.36%			14.07%	15.17%	84.03%	86.64%
	TOTAL	16.32	3.71	3.80	0.57	0.68	0.31	0.37	0.88	0.88	0.88	1.17	5.16	5.65	1.76	1.93	4.28	4.48
			71.90%	67.26%	11.05%	12.04%					17.05%	20.71%			10.78%	11.83%	82.95%	79.29%

(% is calculated with respected to Excavated Area as applicable)

**Note** In reference of the above Table-1, different parameters are classified as follows:

- 1 Area under **Biological Reclamation** includes Area under Plantation done on Backfill only
- 2 Area under **Technical Reclamation** includes Area under Backfilling only
- 3 Area under **Active Mining** includes Coal Quarry, Quarry filled with water & Advance Quarry Site, if any. Coal dump is excluded
- 4 Social Forestry and Plantation on External OB dumps are not included in Biological Reclamation, and are put under separate categories
- 5 (%) calculated in the above table is in respect of total excavated area except for "Total area under plantation" where % is in terms of leasehold area.



**Fig. 1 Project wise Land Reclamation Status for the Year 2018**

## **1.0 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 most scarce 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 effect 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 the above in view, M/s. Coal India Ltd. (CIL) issued a work order vide letter no. CIL/WBP/ENV/2011 dated 12.10.2012 to Central Mine Planning & Design Institute (CMPDI), Ranchi, for monitoring of land reclamation status of all the opencast coal mines having production of more than 5 million m<sup>3</sup> per annum (Coal + OB taken together per annum) regularly on annual basis, and for monitoring of less than 5 million m<sup>3</sup> per annum capacity (Coal +OB) projects at an interval of three years, based on remote sensing satellite data for sustainable development of mining. The work order was renewed vide letter no. CIL/WBP/ENV/2017/DP/8477 dated 21.09.2017 for a period of 5 more years from 2017-18 to 2021-22. The result of land reclamation status of all such mines are to be put on the website of CIL, ([www.coalindia.in](http://www.coalindia.in)), CMPDI ([www.cmpdi.co.in](http://www.cmpdi.co.in)) and the concerned coal companies in public domain. Detailed report has to be submitted to Coal India and respective subsidiary companies.
- 1.3** Land reclamation monitoring of all opencast 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 all the OC projects producing more than 5 mcm (Coal+OB) for Bharat Coking Coal Ltd.

## **2.0 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.

## **3.0 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:



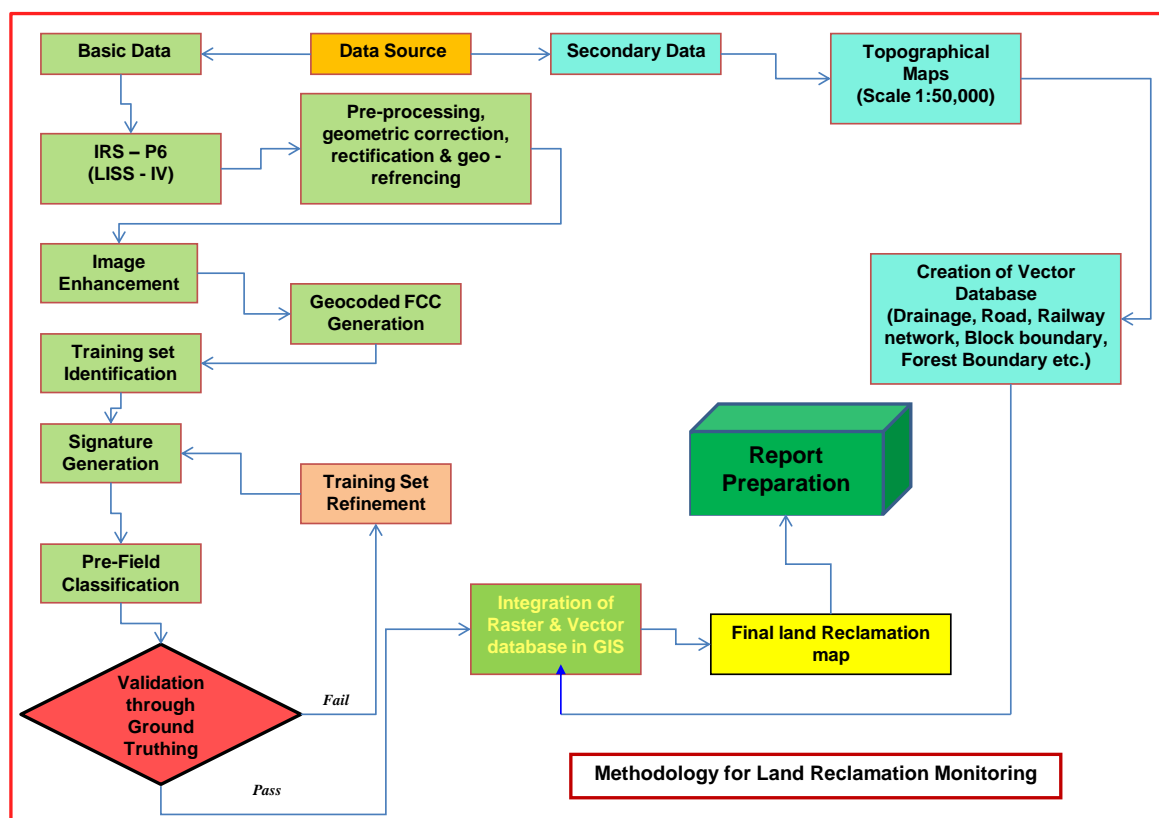


Fig. 2 : Methodology of Land Reclamation Monitoring

**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, topo sheets 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 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 10.2 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.

## 4.0 Land Reclamation Status in Bharat Coking Coal Ltd.

- 4.1 Following two OC projects producing 5 million cubic m. or more (Coal + OB together) of Bharat Coking Coal Ltd. have been taken up for land reclamation monitoring on annual basis:

### **Block-II and Muraidih**

- 4.2 Both the above two projects, Block-II OC and Muraidih have been mapped during the year 2017 & 2018 also.
- 4.3 Project wise Land Reclamation status in BCCL for the year 2018 is given in Table-1 and also shown graphically in Fig-1. Area statistics of different land use classes present in OC projects in the year 2018 is given in Table 2. Land use maps derived from the satellite data are given in Plate no. 1 & 2. Changes in land use status are shown in Fig. 3 & 4.
- 4.4 Study reveals that 79.29% of excavated area has come under reclamation by BCCL in the above two projects, out of which 12.04% area has been re-vegetated and 67.26% area is under backfilling.
- 4.5 After analyzing the satellite data of year 2018 vs. 2017, it is seen (from Table-1) that the plantation carried out on backfilled area, OB dumps as well as social forestry has increased from 1.76 Km<sup>2</sup> (10.78%) to 1.93 Km<sup>2</sup> (11.83%). Together, an increase of 0.17 Km<sup>2</sup> area in social forestry/ backfill plantation, underlines the efforts taken up by the coal company (BCCL) towards plantation activities for land reclamation and environmental protection. An eco-restoration site of 3.6 ha has been developed by the company in Block-II from 2015-16. Another eco restoration area, of 3.2 ha is also developed by the company over OB dump behind the coal stock yard.
- 4.6 In collaboration with The Energy and Resources Institute (TERI) School of Advanced Studies, an area of 6.5 ha has also been developed by the company for bio-diversity through forest landscape restoration, over backfilled area of Muraidih OCP. The plants are of good health, maintained well and is a commendable job.

TABLE - 2							
Status of Land Use / Reclamation in OC Mines(>5m.cu.m) of Bharat Coking Coal Ltd. based on Satellite data of the Year 2018							
(Area in Sq Km)							
		BLOCK-II		MURAIIDIH		TOTAL	
		Area	%	Area	%	Area	%
	Scrubs(A)	2.42	26.68	1.28	17.66	3.70	22.67
PLANTATION	Social Forestry	0.57	6.28	0.31	4.28	0.88	5.39
	Plantation on OB Dump	0.10	1.10	0.27	3.72	0.37	2.27
	Plantation on Backfill(Biological Reclamation)	0.16	1.76	0.52	7.17	0.68	4.17
	<b>Total Plantation ( B )</b>	<b>0.83</b>	<b>9.15</b>	<b>1.10</b>	<b>15.17</b>	<b>1.93</b>	<b>11.83</b>
	<b>Total Vegetation (A+B)</b>	<b>3.25</b>	<b>35.83</b>	<b>2.38</b>	<b>32.83</b>	<b>5.63</b>	<b>34.50</b>
ACTIVE MINING	Coal Quarry	0.58	6.39	0.10	1.38	0.68	4.17
	Advance Quarry Site	0.15	1.65	0.04	0.55	0.19	1.16
	Quarry Filled With Water	0.11	1.21	0.19	2.62	0.30	1.84
	<b>Area under Active Mining (D)</b>	<b>0.84</b>	<b>9.25</b>	<b>0.33</b>	<b>4.55</b>	<b>1.17</b>	<b>7.17</b>
E	Coal Dump	0.11	1.21	0.06	0.83	0.17	1.04
	Barren OB Dump	1.01	11.14	0.47	6.48	1.48	9.07
	Area Under Backfilling(Technical Reclamation)	2.18	24.04	1.62	22.34	3.80	23.28
	<b>Total Area under Mining Operation (D+E)</b>	<b>4.14</b>	<b>45.64</b>	<b>2.48</b>	<b>34.21</b>	<b>6.62</b>	<b>40.56</b>
WASTELAND	Waste Lands	0.23	2.54	0.42	5.79	0.65	3.98
	Fly Ash Pond / Sand Body	0.00	0.00	0.00	0.00	0.00	0.00
WATERBODIES	<b>Total Wasteland</b>	<b>0.23</b>	<b>2.54</b>	<b>0.42</b>	<b>5.79</b>	<b>0.65</b>	<b>3.98</b>
	Reservoir, Nallah, Ponds	0.07	0.77	0.10	1.38	0.17	1.04
	<b>Total Waterbodies</b>	<b>0.07</b>	<b>0.77</b>	<b>0.10</b>	<b>1.38</b>	<b>0.17</b>	<b>1.04</b>
AGRICULTURE	Crop Lands	0.04	0.44	0.00	0.00	0.04	0.25
	Fallow Lands	0.72	7.94	1.30	17.93	2.02	12.38
	<b>Total Agriculture</b>	<b>0.76</b>	<b>8.38</b>	<b>1.30</b>	<b>17.93</b>	<b>2.06</b>	<b>12.62</b>
SETTLEMENTS	Urban Settlement	0.44	4.85	0.33	4.55	0.77	4.72
	Rural Settlement	0.08	0.88	0.15	2.07	0.23	1.41
	Industrial Settlement	0.10	1.10	0.09	1.24	0.19	1.16
	<b>Total Settlement</b>	<b>0.62</b>	<b>6.84</b>	<b>0.57</b>	<b>7.86</b>	<b>1.19</b>	<b>7.29</b>
	<b>Grand Total</b>	<b>9.07</b>	<b>100.00</b>	<b>7.25</b>	<b>100.00</b>	<b>16.32</b>	<b>100.00</b>



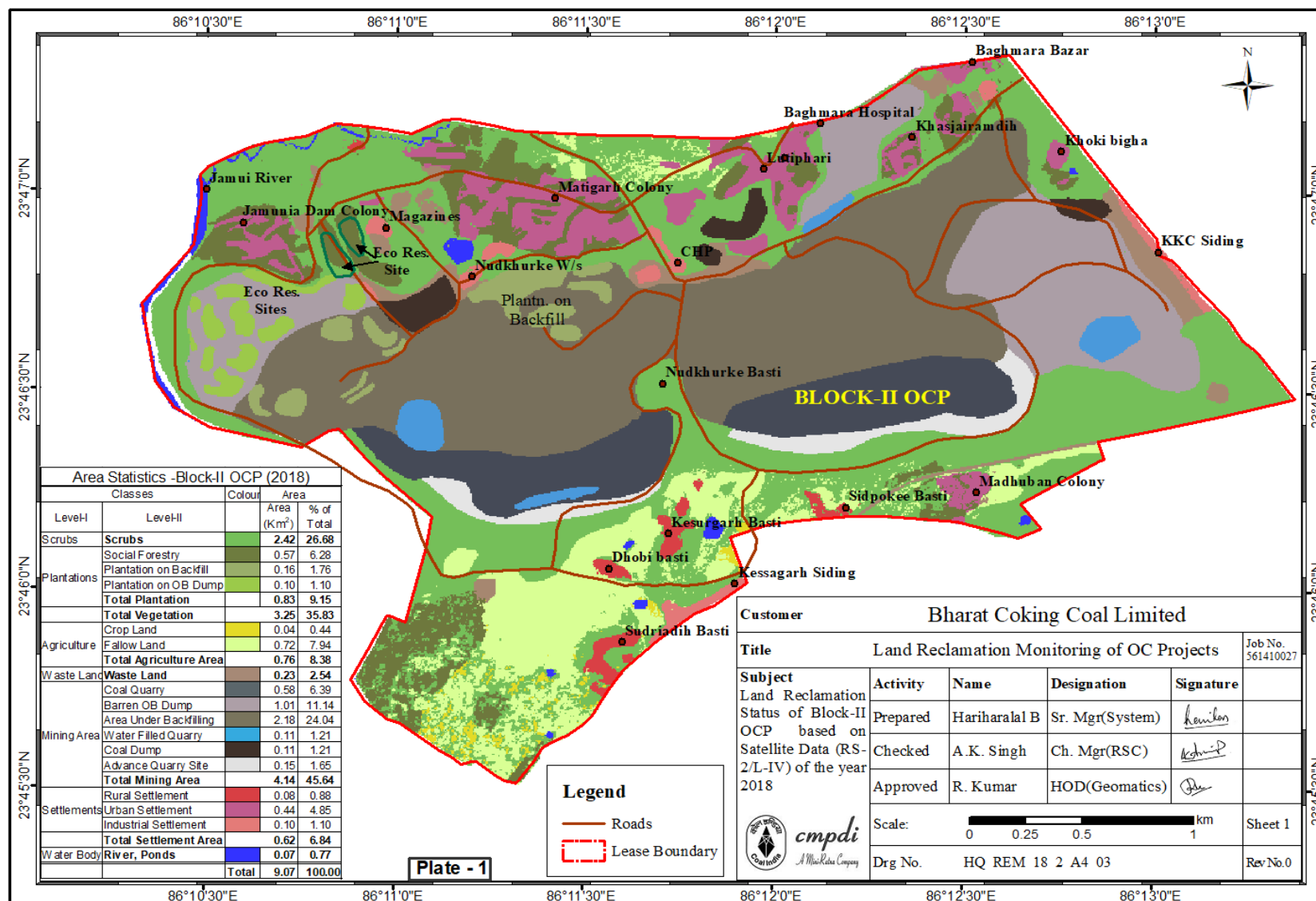


Plate1

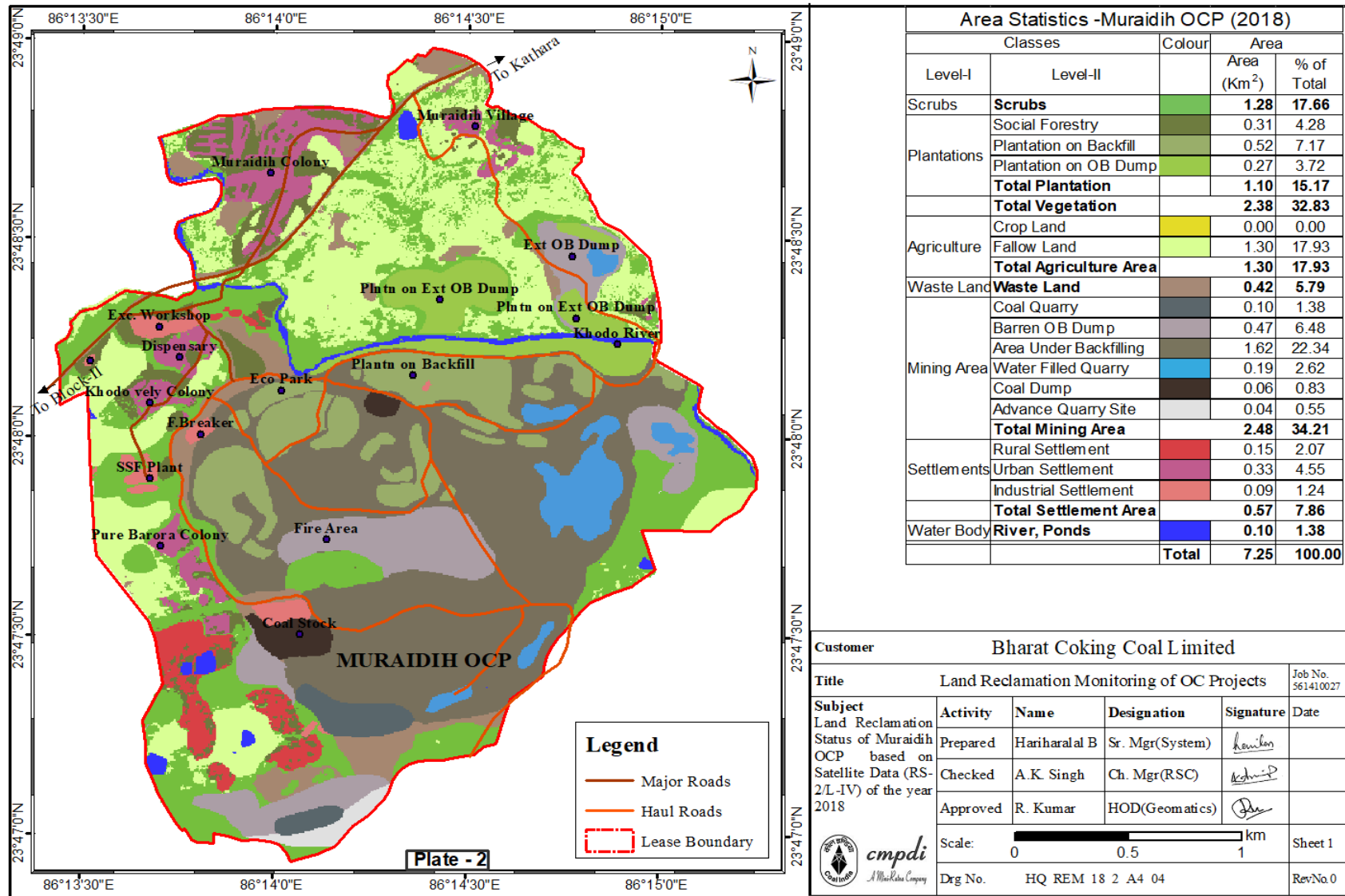
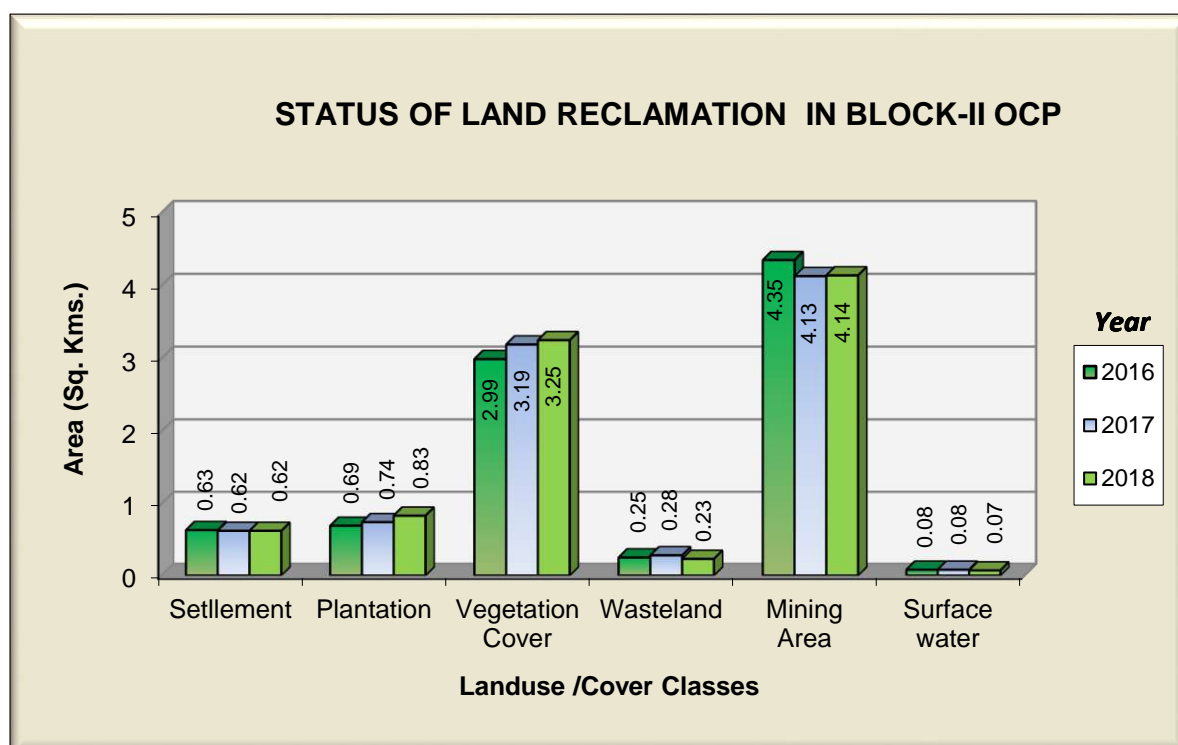
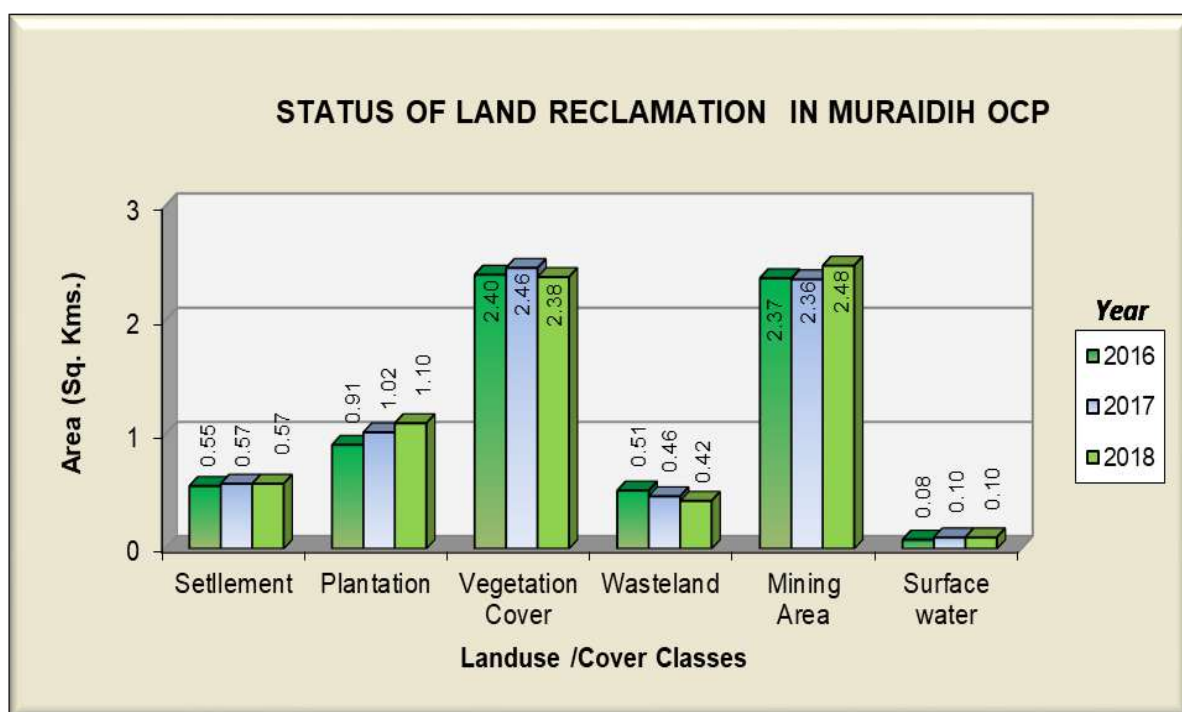


Plate 2



**Figure 3** Status of Land Reclamation in Block-II OCP



**Figure 4** Status of Land Reclamation in Muraidih OCP





**Photo-1. Eco Restoration Park (3.2 ha.) in Block-II OCP**



**Photo-2. Plantation carried out on backfilled area in Muraidih OCP**



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*A Mini-Ratna Company*

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# Deposit in Escrow Accounts with Bank of Baroda

ESCROW ACCOUNT AT BOB	A/C No	Deposit						Interest						Rs. in lakhs	
		2013-14	2014-15	2015-16	2016-17	2017-18	Total	2013-14	2014-15	2015-16	2016-17	2017-18	Total		
MURADIDH, SHATBDI GRP OF MINES	00150100008816	270.79	284.33	298.55	313.48	329.15	1,496.30	10.30	26.70	50.67	63.11	81.78	232.55		
PHULARITAND MIXED MINES (CL-II)	00150100009052	184.48	193.70	203.39	213.56	224.24	1,019.37	-	17.44	34.05	53.37	53.81	158.67		
DAMODA GRP OF MINES	00150100008869	109.74	115.22	120.99	127.03	133.39	606.37	3.33	10.59	20.44	28.14	33.23	95.72		
TOTAL		565.01	593.26	622.92	654.07	686.77	3,122.04	13.63	54.72	105.16	144.62	168.81	486.94		
BLOCK II GRP OF MINES	00150100009044	207.40	217.77	228.65	240.09	252.09	1,145.99	-	19.60	38.28	60.00	60.50	178.38		
MAHESHPUR COLLIERY		207.40	217.77	228.65	240.09	252.09	1,145.99	-	19.60	38.28	60.00	60.50	178.38		
KHARKHAREE COLLIERY	00150100008836	38.40	15.84	16.63	17.46	18.34	106.67	1.46	3.73	5.09	5.47	6.46	22.21		
JOGIDIH COLLIERY	00150100008824	16.02	16.82	17.66	18.54	19.47	88.51	0.61	1.56	3.00	3.75	4.84	13.76		
GOVINDPUR UG	00150100008823	39.85	8.58	9.01	9.46	9.94	76.84	1.52	3.87	4.61	4.55	5.05	19.59		
BLOCK IV / KOORIDIH MINE	00150100008835	20.58	21.61	22.68	23.82	25.01	113.70	0.78	2.00	3.85	4.82	6.21	17.67		
NAKC	00150100008834	100.83	105.87	111.16	116.72	122.56	557.14	3.84	9.80	18.85	23.62	30.45	86.56		
TOTAL		60.59	63.62	66.80	70.14	73.65	334.80	2.31	5.89	11.33	14.19	18.30	52.01		
AKWMC		276.27	232.34	243.94	256.14	268.97	1,277.66	10.51	26.85	46.72	56.41	71.30	211.79		
AARC	00150100009051	189.04	198.50	208.42	218.84	233.38	948.18	-	17.87	34.89	54.69	55.14	162.59		
SALANPUR UG MINE	00150100009053	51.05	19.48	20.45	21.48	97.27	209.72	-	4.82	6.48	8.62	7.47	27.39		
KATRAS CHAITIDH	00150100009050	84.13	20.08	21.09	22.14	44.47	191.90	-	7.95	9.65	12.05	10.61	40.27		
GASLITAND COLLIERY	00150100010086	-	82.12	86.23	90.54	114.64	373.52	-	-	6.09	14.12	22.62	42.83		
TOTAL		-	-	-	-	99.98	99.98	-	-	-	-	0.02	0.02		
NICHITPUR COLLIERY	00150100008825	324.22	320.18	336.19	352.99	489.73	1,823.30	-	30.64	57.12	89.48	95.55	273.09		
TETULMARI COLLIERY	00150100008833	129.16	135.62	142.40	149.52	156.99	713.69	4.91	12.55	24.15	30.26	39.00	110.88		
SANDRA BANSJORA COLLIERY	00150100008832	52.96	55.61	58.39	61.31	63.51	291.78	2.02	5.15	9.90	12.41	15.99	45.47		
MUDIDH COLLIERY	00150100008829	118.24	124.15	130.36	136.87	143.72	653.34	4.50	11.49	22.11	27.70	35.70	101.50		
LOYARAD COLLIERY	00150100008826	83.75	19.73	20.72	21.75	22.84	168.79	3.19	8.14	9.82	9.80	10.98	41.93		
KANKANEE COLLIERY	00150100010973	-	-	-	-	161.44	161.44	-	-	-	-	0.02	0.02		
TOTAL		483.77	439.75	461.75	484.82	669.64	2,539.73	18.41	47.01	84.63	103.51	131.79	385.36		
KUSUNDA OCP	00150100008870	103.82	109.01	114.46	120.18	126.19	573.67	3.15	10.01	19.34	26.62	31.43	90.56		
EAST BASSIRIYA OCP	00150100008876	48.31	50.72	53.26	55.92	58.72	266.92	1.47	4.66	9.00	12.39	14.63	42.14		
DHANSAR(ADIC)	00150100008939	92.02	96.62	101.45	106.52	111.85	508.46	1.40	8.80	17.11	24.60	27.68	79.58		
GODHUR GRP OF MINES	00150100009048	55.23	57.99	60.89	63.94	67.13	305.19	-	5.22	10.19	15.98	15.98	47.37		
BASSIRIYA UG MINE	00150100008944	151.88	5.91	6.21	6.52	6.85	177.37	2.30	14.52	15.03	15.18	13.60	60.63		
GONDUBHUKHIA KUSUNDA OCP	00150100008875	134.40	141.12	148.18	155.59	163.37	742.65	4.08	12.96	25.04	34.46	40.69	117.23		
ENA OCP	00150100008938	47.67	50.05	52.55	55.18	57.94	263.39	0.72	4.56	8.86	12.74	14.34	41.22		
TOTAL		633.33	511.43	537.00	563.85	592.04	2,837.65	13.11	60.73	104.57	141.97	158.35	478.73		
PB GRP OF MINES	00150100009045	84.91	34.30	36.02	37.82	39.71	232.76	-	8.03	10.95	14.69	13.58	47.24		
BURRAGARIH UG	00150100008821	6.67	7.00	7.35	7.72	8.11	36.85	0.25	0.65	1.25	1.56	2.01	5.72		
BIHRLADH UG	00150100008820	8.49	7.22	7.58	7.96	8.35	39.60	0.32	0.83	1.44	1.56	2.20	6.35		
BIHURGORIA UG	00150100008818	7.43	7.80	8.19	8.60	9.03	41.05	0.28	0.72	1.39	1.74	2.24	6.38		
GOPALCHOK UG	00150100008819	75.49	11.06	11.61	12.19	-	110.35	2.87	7.34	8.28	7.86	8.48	34.83		
GOPALCHOK MINE	00150100010972	-	-	-	-	61.76	61.76	-	-	-	-	0.01	0.01		
TOTAL		182.99	67.38	70.75	74.29	126.96	522.37	3.73	17.56	23.31	27.42	28.52	100.54		
BASTACOLLA COLLIERY	00150100008877	20.63	21.67	22.75	23.89	25.08	114.01	0.63	1.99	3.84	5.29	6.25	18.00		
BERA COLLIERY	00150100008873	48.69	51.13	53.69	56.37	59.17	234.04	1.48	4.83	9.08	12.50	14.75	42.63		
DODARI COLLIERY	00150100008935	5.50	5.78	6.07	6.36	6.65	30.36	0.08	0.53	1.02	1.43	2.26	5.30		
GANHOODH OCP	00150100008936	78.35	82.27	86.38	90.70	95.23	432.92	1.19	7.49	14.57	20.94	23.57	67.75		
SIMLABAHAL UG	00150100008822	11.27	8.42	8.84	9.28	9.75	47.56	0.43	1.10	1.82	2.15	2.69	8.17		
KUYA GRP OF MINES	00150100008874	165.03	173.29	181.95	191.05	200.60	911.92	5.01	15.92	30.74	42.32	49.97	143.95		
RAJAPUR S/JHARIA OCP	00150100008937	73.81	77.50	81.37	85.44	89.72	407.84	1.12	7.05	13.73	19.73	22.20	63.83		
TOTAL		403.29	420.04	437.19	454.55	472.49	1,857.56	9.93	38.92	74.80	117.76	142.11	383.52		
NT-ST-JEENAGORA GRP OF MINES	00150100009046	387.56	406.94	427.29	448.65	471.09	2,143.53	-	36.63	71.53	112.12	113.05	333.33		
JOYRAMPUR UG MINE	00150100009049	18.86	6.75	7.09	7.45	-	40.15	-	1.78	2.36	3.11	2.84	10.09		
BARAREE COLLIERY	00150100008940	163.59	25.04	26.29	27.60	-	242.52	2.48	15.64	17.79	19.44	18.55	73.90		
LODNA COLLIERY	00150100008942	61.64	17.80	18.69	19.62	-	117.75	0.93	5.89	7.42	8.71	8.74	31.70		
KUJAMA COLLIERY	00150100008941	45.50	47.77	50.16	52.67	55.30	251.39	0.69	4.35	8.46	12.16	13.68	39.34		
AMALGAMATED JOYRAMPUR OCP	0015010001026	-	-	-	-	560.98	560.98	-	-	-	-	0.09	0.09		
TOTAL		677.15	504.30	529.52	555.99	1,087.36	3,354.32	4.11	64.29	107.56	155.54	156.95	488.45		
SUDAMDH INC MINES	00150100008872	64.31	5.33	5.50	5.87	6.17	87.27	1.95	6.20	6.66	6.66	6.76	27.84		
BHOWRA(N) GRP OF MINES	00150100008868	136.22	143.03	150.18	157.68	165.55	662.66	4.13	13.14	25.37	34.93	31.88	109.46		
BHOWRA(S) GRP OF MINES	00150100008830	563.49	211.98	87.57	91.95	96.55	1,051.54	21.44	54.76	72.88	68.24	72.74	290.06		
PATHERDHI GRP OF MINES	00150100008871	57.22	60.08	63.09	66.24	69.55	316.19	1.74	5.52	10.66	14.67	17.33	49.91		
TOTAL		821.23	420.42	306.43	170.95	179.50	1,898.51	29.26	79.62	115.67	124.50	128.31	477.26		
MOONIDH UG PROJECT	00150100008943	82.18	86.29	90.60	95.13	99.89	454.09	1.25	7.85	15.28	22.33	24.35	71.07		
MURLIDH 20/21 PTH COLLIERY	00150100009047	31.41	32.98	34.63	36.36	38.18	173.56	-	2.97	5.80	9.09	9.16	27.02		
LOHAPATTY COLLIERY	00150100009043	267.70	281.08	140.03	147.03	154.38	990.22	-	25.30	49.41	64.37	59.75	198.83		
TOTAL		381.28	400.35	265.26	278.53	292.45	1,617.87	1.25	36.13	70.48	95.78	93.27	296.91		
EASANTIMATA COLLIERY	00150100008827	121.88	28.90	30.34	31.86	33.45	246.43	4.64	12.02	14.33	14.30	16.02	61.31		
DAHIBARI BASANTIMATA OCP	00150100008828	128.57	135.00	141.75	148.84	156.28	710.44	4.89	12.49	24.04	30.12	38.82	110.37		
KALYANESHWARI GRP OF MINES	00150100009042	209.61	220.09	231.09	242.65	254.78	1,158.22	-	19.79	38.68	60.64	60.60	179.80		
TOTAL		460.06	383.99	403.18	423.35	444.51	2,115.09	9.53	44.30	77.05	105.06	115.54	351.48		
GRAND TOTAL		5,416.00	4,511.20	4,612.78	4,692.61	5,721.18	24,953.76	113.47	520.36	905.26	1,222.04	1,351.30	4,112.43		



# POLLUTION UNDER CONTROL

DATE OF ISSUE

04/09/2019

VALID UP

05/03/2020

Sl. No. 2698

Licence No.- 10/2019

## COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY : **M/S SRI RAM AUTO POLLUTION CENTER**

TRANSPORT DEPT. GOVT. OF JHARKHAND  
BHIKHRAJPUR, KONARTAND  
BALIAPUR, DHANBAD, JHARKHAND



Vehicle Registration No. JH10BA 6788

Year of Registration: 2016

Date : 04/09/2019

Vehicle Make : TATA MOTORS

Type of Vehicle : TIPPER

Vehicle Model : 2016

Valid Upto : 05/03/2020

Vehicle Colour :



Test Result :

**DIESEL**

Validity : 6 Months

CO	
HC	

HSU	46%
KVAL	

Permissible Limits of CO (Petrol) 3% Vol. for the new four Wheelers and 4.5% Vol. for Vehicles Five Years old or 80000 Kms. whichever is earlier. Permissible Limited of CO for petrol 2-3 wheelers are 4.5% Vol.

From P.C.

(See Rule 252 of J.M.V. Rules, 2002)

**ALL INDIA VALID**

Name of Authorised Signature

*Suzelly*

Seal of Pollution Centre





# POLLUTION UNDER CONTROL

DATE OF ISSUE

04/09/2019

VALID UP

05/03/2020

Sl. No. 2700

Licence No.- 10/2019

## COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY: **M/S SRI RAM AUTO POLLUTION CENTER**

TRANSPORT DEPT. GOVT. OF JHARKHAND

BHIKHRAJPUR, KONARTAND

BALIAPUR, DHANBAD, JHARKHAND



Vehicle Registration No. JH10BA 2088

Year of Registration 2016

Date : 04/09/2019

Vehicle Make : TATA MOTORS

Type of Vehicle : TIPPER

Vehicle Model : 2016

Valid Upto : 05/03/2020

Vehicle Colour :



Test Result : **DIESEL**

Validity : 6 Months

CO	
HC	

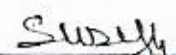
HSU	46%
KVAL	

Permissible Limits of CO (Petrol) 3% Vol. for the new four Wheelers and 4.5% Vol. for Vehicles Five Years old or 80000 Kms. whichever is earlier. Permissible Limited of CO for petrol 2-3 wheelers are 4.5% Vol.

From P.C.

(See Rule 252 of J.M.V. Rules, 2002)

**ALL INDIA VALID**

  
Name of Authorised Signature





# POLLUTION UNDER CONTROL

DATE OF ISSUE

04/09/2019

VALID UP

05/03/2020

Sl. No. 2697

Licence No.- 10/2019

## COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY: **M/S SRI RAM AUTO POLLUTION CENTER**

TRANSPORT DEPT. GOVT. OF JHARKHAND  
BHIKHRAJPUR, KONARTAND  
BALIAPUR, DHANBAD, JHARKHAND



Vehicle Registration No. JH10BA 6488

Year of Registration 2016

Date : 04/09/2019

Vehicle Make : TATA MOTORS

Type of Vehicle : TIPPER

Vehicle Model : 2016

Valid Upto : 05/03/2020

Vehicle Colour :



Test Result :

**DIESEL**

Validity : 6 Months

CO	
HC	

HSU	46%
KVAL	

Permissible Limits of CO (Petrol) 3% Vol. for the new four Wheelers and 4.5% Vol. for Vehicles Five Years old or 80000 Kms. whichever is earlier. Permissible Limited of CO for petrol 2-3 wheelers are 4.5% Vol.

From P.C.

(See Rule 252 of J.M.V. Rules, 2002)

**ALL INDIA VALID**

Name of Authorised Signature

*Susmitha*





# POLLUTION UNDER CONTROL

DATE OF ISSUE

04/09/2019

VALID UP

05/03/2020

Sl. No. 2699

Licence No.- 10/2019

## COMPUTERISED EMISSION TEST CERTIFICATE

AUTHORISED BY: **M/S SRI RAM AUTO POLLUTION CENTER**

TRANSPORT DEPT. GOVT. OF JHARKHAND  
BHIKHRAJPUR, KONARTAND  
BALIAPUR, DHANBAD, JHARKHAND



Vehicle Registration No. JH10BA 1588

Year of Registration 2016

Date : 04/09/2019

Vehicle Make : TATA MOTORS

Type of Vehicle : TIPPER

Vehicle Model : 2016

Valid Upto : 05/03/2020

Vehicle Colour :



Test Result

**DIESEL**

Validity : 6 Months

CO	
HC	

HSU	45%
KVAL	

Permissible Limits of CO (Petrol) 3% Vol. for the new four Wheelers and 4.5% Vol. for Vehicles Five Years old or 80000 Kms. whichever is earlier. Permissible Limited of CO for petrol 2-3 wheelers are 4.5% Vol.

From P.C.

(See Rule 252 of J.M.V. Rules, 2002)

**ALL INDIA VALID**

  
Name of Authorised Signature





Name of Mine \_\_\_\_\_  
Owner \_\_\_\_\_

200

**Signature of the Training Officer**



Register of trainees attending V. T. Courses at \_\_\_\_\_  
 Training Centre during the period ending August, 2017

Sl No	Name & Surname of trainee	Category/Group	Index Card No	Place of Work Mine Section	Place of Local residence	Subject	Date & section classes held	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Remarks
	Name & Surname					Div.																						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20									
61	Navin Das 02023181	Tramway			Phulibid Adey	26-08-79	P	P	P	P	P	P	P															P 07
62	Ram Kumar Pandey 01556435	EA Fitter			ABCO Mine	26-08-79	P	P	P	P	P	P															P 10	
63	Komal Nishyab 02902138	Dumper Operator					P	P	P	P	P																P 09	
64	Daulet Ram Pari 03039070	Coner Operator					P	P	P	P	P																P 07	
65	Bhola Mahab 02796878	EP. Mdr.					P	P	P	P																	P 07	
66	Sheel Pasad Nandya 01227115	Dumper Operator				27-08-79	P	P	P	P	P																P 16	

<b>Abstract of the month of "AUGUST" 2017</b>																			
		Name of mine		This month		Cumulative													
		ABCO mine		20		90 + 20 =													
		Muralidh colliery		19		68 + 19 =													
		Phulitank colliery		27		81 + 27 =													
				66		239 + 66 =													
						305													

N.B.-1. Details of lecturers/Instructors transmission partial work of various training courses as per schemes should be entered in Register and appropriate abbreviation used in Column 8 & onwards.  
 2. 'P' or 'A' to be indicated in Col 8 & onwards to indicate presence or absence of individual trainees during each session. Also morning or evening session attended should be indicated by 'M' or 'E'.

Signature of the Instructor \_\_\_\_\_  
 Date \_\_\_\_\_

Signature of the Trainee Officer \_\_\_\_\_  
 Date \_\_\_\_\_



### Ninth Schedule—Form

200

Abstract of the month - June (Jun-2019)  
Name of mine - Thidimnath - Cumulative

or absent or individual trainees during each session. Also morning or evening session started should be indicated by 'M' or 'E'

$$\frac{\text{Rate } \$5 \text{ + } 26}{111 + 58} = \frac{81}{239}$$



**Bharat Coking Coal Limited**  
**MINES VOCATIONAL TRAINING RULES, 1966**

Register of trainees attending V. T. Courses at

**Training Centre during the period ending**

200

[illegible]

2

1. Details of lectures/syllabs & curriculum/practical work of various training centres as per subject should be indexed in Register and appropriate abbreviations used in Column 8 & onwards.

Signature of the Instructor

Signature of the Training Officer

ECJ 112/3:84-4.05-5 Ref

Date \_\_\_\_\_

Date...



**BHARAT COKING COAL LIMITED**  
(A Subsidiary of Coal India Limited)  
**OFFICE OF THE GENERAL MANAGER**  
**BLOCK-II AREA, PO-NAWAGARAH, DHANBAD-828306**  
CIN:U10101JH1972GO1000918  
Tel. No-0326-2393108/Fax No-0326-2393108

Ref: GM/B-II/18-19/ ८३२

Date: 24.10.2018

To,  
The Mukhiya  
Dumra (North) Gram Panchayat

Sub: Regarding submission of EC letter of Cluster-II groups of mines, BCCL.  
Ref-EC letter no. J-11015/35/2011-IA.II(M) dt 06.02.2013

Dear Sir,  
Environmental clearance of Cluster-II groups of mines, BCCL has granted by ministry of Environment, Forest and Climate Change vide EC letter no. J-11015/35/2011-IA.II(M) dt 06.02.2013. As per general condition no.xiv of EC letter, Please find enclosed herewith the above referred letter. This is for your kind information and record.

Encl: As above

Yours Sincerely

*[Signature]*  
General Manager  
Block-II Area

Copy to:  
1. Dy. GM (Env), Koyla Bhawan.

*Received*  
*Gurpreet Arora*  
मुखिया २५-१०-१८  
ग्राम पंचायत डुमरा उत्तर  
ब्लॉक-II- नावागारा (धनबाद)

Scanned by CamScanner



**BHARAT COKING COAL LIMITED**  
(A Subsidiary of Coal India Limited)  
**OFFICE OF THE GENERAL MANAGER**  
**BLOCK-II AREA, PO-NAWAGARAH, DHANBAD-828306**  
CIN:U10101JH1972GO1000918  
Tel. No-0326-2393108/Fax No-0326-2393108

Ref: GM/B-II/18-19/ ८३२

Date: 24.10.2018

To,  
The Mukhiya  
Dumra (South) Gram Panchayat

Sub: Regarding submission of EC letter of Cluster-II groups of mines, BCCL.  
Ref-EC letter no. J-11015/35/2011-IA.II(M) dt 06.02.2013

Dear Sir,  
Environmental clearance of Cluster-II groups of mines, BCCL has granted by ministry of Environment, Forest and Climate Change vide EC letter no. J-11015/35/2011-IA.II(M) dt 06.02.2013. As per general condition no.xiv of EC letter, Please find enclosed herewith the above referred letter. This is for your kind information and record.

Encl: As above

Yours Sincerely

*[Signature]*  
General Manager  
Block-II Area

Copy to:  
1. Dy. GM (Env), Koyla Bhawan.

*Received*  
*Namrata Singh*  
मुखिया २५-१०-१८  
ग्राम पंचायत डुमरा दक्षिण  
ब्लॉक-II- नावागारा (धनबाद)



**BHARAT COKING COAL LIMITED**  
(A Subsidiary of Coal India Limited)  
**OFFICE OF THE GENERAL MANAGER**  
**BLOCK-II AREA, PO-NAWAGARAH, DHANBAD-828306**  
CIN:U10101JH1972GO1000918  
Tel. No-0326-2393108/Fax No-0326-2393108

Ref: GM/B-II/18-19/ १३५

Date: 24.10.2018

To,  
The Mukhiya  
Barera Gram Panchayat

Sub: Regarding submission of EC letter of Cluster-II groups of mines, BCCL.

Ref-EC letter no. J-11015/35/2011-IA.II(M) dt 06.02.2013

Dear Sir,

Environmental clearance of Cluster -II groups of mines, BCCL has granted by ministry of Environment, Forest and Climate Change vide EC letter no. J-11015/35/2011-IA.II(M) dt 06.02.2013. As per general condition no.xiv of EC letter, Please find enclosed herewith the above referred letter. This is for your kind information and record.

Encl: As above

Yours Sincerely

*[Signature]*  
General Manager  
Block-II Area

Copy to:  
1. Dy. GM (Env), Koyla Bhawan.

*Received*  
*मरीज देवी*  
25/10/2018  
*मुअय्या*  
ग्राम पंचायत बरेरा



**BHARAT COKING COAL LIMITED**  
(A Subsidiary of Coal India Limited)  
**OFFICE OF THE GENERAL MANAGER**  
**BLOCK-II AREA, PO-NAWAGARAH, DHANBAD-828306**  
CIN:U10101JH1972GO1000918  
Tel. No-0326-2393108/Fax No-0326-2393108

Ref: GM/B-II/18-19/ १३५

Date: 24.10.2018

To,  
The Mukhiya  
Munsih Gram Panchayat

Sub: Regarding submission of EC letter of Cluster-II groups of mines, BCCL.

Ref-EC letter no. J-11015/35/2011-IA.II(M) dt 06.02.2013

Dear Sir,

Environmental clearance of Cluster -II groups of mines, BCCL has granted by ministry of Environment, Forest and Climate Change vide EC letter no. J-11015/35/2011-IA.II(M) dt 06.02.2013. As per general condition no.xiv of EC letter, Please find enclosed herewith the above referred letter. This is for your kind information and record.

Encl: As above

Yours Sincerely

*[Signature]*  
General Manager  
Block-II Area

Copy to:  
1. Dy. GM (Env), Koyla Bhawan.

*Received*  
*अमिता देवी*  
25/10/2018  
*(मुअय्या) मुअय्या देवी*  
*ग्राम पंचायत मुनसिह*

## ACTION PLAN FOR ENVIRONMENT CLEARANCE COMPLIANCE IN RESPECT OF BARORA AREA

SL No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
1	Air Pollution Control measures	<b>Covered Transportation</b> A) Responsibility of CISF personnel appointed at weigh-bridge will be to maintain a Register for tarpaulin covering of coal loaded trucks. B) GMs of respective areas will insure the implementation of the above within 15 days of order/Action Plan released. C) <b>CMC Deptt:</b> New contracts should have penal provisions for violation of Environmental Guidelines	✓ <b>3 Months</b> <i>Ensuring proper mechanism of inspection and implementation of Covered truck is in Place</i>  <b>Continuing</b>	-	-	<ul style="list-style-type: none"> <li>Area Environment Engineer</li> <li>Area GM</li> <li>HOD(Env), HQ BCCL</li> </ul>	NA	Complied.
2		<b>Permanent Pucca Transportation Road</b> <b>A)</b> Roads under BCCL will be Paved/Black topped in Non-Coal Bearing Area <b>B)</b> <i>Cost Estimate:</i> Area Civil Engineer ( <b>4 Months</b> ) <b>C)</b> <i>Capital Indent:</i> Area Civil Engineer (3 Months) <b>D)</b> <i>Approvals/Tender/ Work start and completion:</i> Area Civil Deptt. & CED, HQ ( <b>12 Months</b> )	-	-	✓	<ul style="list-style-type: none"> <li>Area Civil Engineer</li> <li>Area GM BCCL</li> </ul>	Capital Budget Respective Areas 3 crores	Proposal made for construction of coal transportation road from Muraidih entrance gate to Shatabdi CISF check post under Barora Area.Total Estimated cost:- Rs 3,39,05,025 Ref no:- GM/AR-1/Civil/2018/11 dtd 29.11.2018
3		<b>Drilling with Dust extractor/wet drilling</b> <b>A)</b> All Existing drills are equipped with dust containment or water injection system. All new		✓ At present no drills procureme		<ul style="list-style-type: none"> <li>GM Excavation</li> <li>Area GM BCCL</li> </ul>	- Capital Budget will be	Dust extractor available in all drills in Muraidih colliery



SL No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
		<p>procurements of drills shall be with dust containment system.</p> <p><b>B) Cost Estimate:</b> Excavation Deptt.</p> <p><b>C) Capital Indent:</b> Excavation Deptt.</p> <p><b>D) Approvals/Tender/ Work start and completion:</b> E&amp;M Deptt.</p>		nt is in-line.			reapportioned as required	
4		<p><b>Fixed Sprinkling arrangements at Siding (preferably at height)</b></p> <p><b>A)</b> Fixed sprinklers shall be installed</p> <p><b>B) Cost Estimate:</b> Siding in-charge &amp; Area E&amp;M Manager, E&amp;M In-charge Washery (3 Months)</p> <p><b>C) Capital Indent:</b> Colliery Manager &amp; Area E&amp;M Manager, Area Env Engineer/ Project officer (Washery) (2Months)</p> <p><b>D) Approvals/Tender/ Work start and completion:</b> Area E&amp;M Deptt. &amp; MM deptt, HQ (7 Months)</p>	-	✓	-	<ul style="list-style-type: none"> <li>Area GM</li> <li>GM WCD</li> <li>HOD(Env) BCCL</li> </ul>	Capital Budget Environment Head: 2.5 Crores. Othr Heads : 6.5 Lakhs	Proposal for providing fixed water sprinkler at KKC Link siding made. The total estimated cost for same is Rs 8,33,088 and sent to finance department for budget Ref no:- GM/AR-1/Civil/2019/03 dtd 05.09.2019
5		<p><b>Overhead sprinklers at Loading site</b></p> <p><b>A)</b> At loading points overhead water showering arrangement shall be provided.</p> <p><b>B) Cost Estimate:</b> Colliery Engineer &amp; Area E&amp;M Manager (2 Months)</p> <p><b>C) Capital Indent:</b> Colliery Manager &amp; Area E&amp;M Manager (2Months)</p> <p><b>D) Approvals/Tender/ Work start and completion:</b> Area E&amp;M Deptt. &amp; Project officer (7 Months)</p>	-	✓	-	<ul style="list-style-type: none"> <li>Project Officer</li> <li>Area GM</li> <li>HOD(Env) BCCL</li> </ul>	Capital Budget Environment Head: 2.5 Crores.	Proposal made and move by Engineer I/C E&M for covering of F/B and additional water sprinkler. Proposal is pending at Finance Deptt.
6		<p><b>Mobile sprinklers/ Mist Sprinkler</b></p> <p><b>A)</b> Mobile sprinklers trips will be increased and Mist sprinklers will be done</p> <p><b>B) Cost Estimate:</b> E&amp;M Deptt., HQ(3 Months)</p> <p><b>C) Capital Indent:</b> Area E&amp;M Manager (2Months)</p>	-	✓	-	<ul style="list-style-type: none"> <li>GM E&amp;M</li> </ul>	Capital Budget Environment Head: 2.5 Crores	Mobile water sprinklers trips is increased. One Mobile Water Sprinkler procurement in under process.

SL No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
		<b>D) Approvals/Tender/ Work start and completion:</b> MM deptt, HQ (6 Months)						
7		<b>Wheel washing ditches after weigh-bridge for tire cleansing</b> <b>A)</b> Wheel washing arrangement shall be provided at Weigh- Bridge site <b>B) Cost Estimate:</b> Colliery Manager & Area Civil Engineer (32 Months) <b>C) Capital Indent:</b> Colliery Manager, Project officer & Area Civil Engineer (2Months) <b>D) Approvals/Tender/ Work start and completion:</b> Area E&M Deptt. & MM deptt, HQ (6 Months)	-	✓	-	<ul style="list-style-type: none"> <li>Project Officer</li> <li>Are a GM</li> <li>Pro ject Officer, Washery BCCL</li> </ul>	Capital Budget New commitment	Proposal for wheel washing ditches at the entrance point of Muraidih colliery is made. The total estimated capital budget for same is Rs 1,56,405 and send to Headquarter for approval.  Ref no:- GM/AR-1/Civil/2019/02 dtd 29.08.2019
8		<b>Enclosure of CHP/covered crushing</b> <b>A)</b> CHP/Crushers shall be covered <b>B) Cost Estimate:</b> Area Manager Transport & Area E&M Manager (2 Months) <b>C) Capital Indent:</b> Colliery Manager & Project officer (2Months) <b>D) Approvals/Tender/ Work start and completion:</b> Area E&M Deptt. & MM deptt, HQ (6 Months)	-	✓	-	<ul style="list-style-type: none"> <li>Area Manager transport</li> <li>Area Manager Sales BCCL</li> </ul>	Capital Budget New Commitment	Proposal made and move by Engineer I/C E&M for covering of F/B . Notesheet is pending at Finance Dept.
9		<b>Grass covering over inactive OB dumps.</b> <b>A)</b> Inactive OB dumps shall be identified and will be covered with grass <b>B) Cost Estimate:</b> Area Environment Engineer (2 Months) <b>C) Proposal:</b> HQ Env Deptt. (2Months) <b>D) Approvals/Tender/ Work start and completion:</b> HQ, Env Deptt. (6 Months)	-	✓ Continuing	✓	<ul style="list-style-type: none"> <li>HOD (Env)</li> <li>SRM (Min), Eco-Restoration Team</li> <li>Area Env Manager</li> </ul>	Revenue Budget Rs 5 crores	Seed Ball spreading at Muraidih and phularitand Dump at Eco restoration site and dead dump done.

SL No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
10		<b>Building boundaries around railway siding made of coconut choirs or GI sheets.</b> <b>A)</b> Railway sidings will be surrounded with boundaries of GI Sheets/Coconut coir/Jute Cloths <b>B)</b> <i>Cost Estimate:</i> Siding in-charge & Area Civil Manager ( <b>2 Months</b> ) <b>C)</b> <i>Capital Indent:</i> Colliery Manager & Project officer ( <b>2Months</b> ) <b>D)</b> <i>Approvals/Tender/ Work start and completion:</i> Area E&M Deptt. & MM deptt, HQ ( <b>6 Months</b> )	-	✓	-	<ul style="list-style-type: none"> <li>Area GM</li> <li>HOD(Env) BCCL</li> </ul>	Capital Budget New Commitment	Discussed with HoD for same in meeting on 31.10.19 at AGM Chamber and he told that provision for boundary wall at siding add in capital budget for FY2019-20
11		<b>Introducing Bioswale as Pilot Project</b> <b>A)</b> Cost Estimate: GM Civil, CED, HQ <b>B)</b> Capital Indent: GM Civil, CED,HQ <b>C)</b> Approval/Tender/Work start and completion: CED, HQ			✓	<ul style="list-style-type: none"> <li>Concerned Area GM</li> <li>GM Civil</li> <li>HOD(Env)</li> </ul>	Capital Budget New Commitment	By HQ
12		<b>Fiery coal/OB should be dumped in-pit/ wetted completely before transporting</b> <b>A)</b> Fiery coal shall not be transported on elevated OB dumps and shall be dumped in-pit/ transported after complete wetting <b>B)</b> Project officer & Area manager planning to site the location prior to excavating fiery coal/OB. <b>C)</b> Water Pools to be used for drenching of fire and wetting of fiery coal/OB <b>D)</b> Strict instructions to be issued from Functional Technical Directors.	✓	-	-	<ul style="list-style-type: none"> <li>Area GM</li> <li>HOD (Env)</li> </ul>	-	Complied. Discussed with Area GM, most of the fiery coal wetted before transporting
13		<b>Pollution under control Certificate to be ensured by Transporter/ BCCL transport in-charge</b> <b>A)</b> <i>CMC Deptt:</i> To be included in contracts of transporter	✓	-	-	Area Manager Transport HOD(Env)	-	Letter given to transporter and respective department for the compliance of same

SL No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
		B) <i>Area Transport In-Charge shall ensure PUC is issued to all plying vehicles</i>						
14	Inspection/ Monitoring measures/ Complaint Redressal	<b>AAQ Monitoring</b> A) 39 Air and Noise Monitoring Stations in JCF B) Stations established in consultation with JSPCB	✓ <b>Ongoing</b>	-	-	<ul style="list-style-type: none"> <li>CMPDI L, RI-II, Dhanbad</li> </ul>	Revenue Budget Rs 3.5 crores	Complied. Ongoing
15		<b>COAAQMS,</b> A) COAAQMS shall be installed at Jagjeevan Nagar B) <i>Cost Estimate:</i> CMPDIL, RI-II, Dhanbad ( <b>2 Months</b> ) C) <i>Capital Indent:</i> CMPDIL, RI-II, Dhanbad ( <b>2Months</b> ) D) <i>Approvals/Tender/ Work start and completion:</i> CMPDIL, RI-II, Dhanbad ( <b>6 Months</b> )  <b>Online PM10 Analyser</b> Online PM10 Analyzer shall be installed at Mines and Railway sidings A) <i>Cost Estimate:</i> Area Environment Manager ( <b>2 Months</b> ) B) <i>Capital Indent:</i> Colliery Manager ( <b>2Months</b> ) C) <i>Approvals/Tender/ Work start and completion:</i> MM Deptt, HQ ( <b>6 Months</b> )	-	✓	✓	<ul style="list-style-type: none"> <li>CMPDIL</li> <li>HOD(Env) BCCL</li> </ul>	Capital Budget Rs 3 crores	NA
16		<b>Source Apportionment Study</b> Work awarded to NEERI, Nagpur on 12.05.2018. Monitoring work started Final report shall be submitted in One year	-	✓	-	HOD(Env)	Revenue Budget Rs 1.41 Crores	By HQ

SL No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
17		<b>HQ Environment Deptt. review and report the status of compliances to FDs and Board</b> <ul style="list-style-type: none"> <li>Structured Meetings with All Areas/washeries</li> <li>Inspection of Areas by HQ, Compliance Team</li> </ul>	✓ <b>Ongoing</b>	-	-	SRM (Min) HOD(Env)	-	By HQ
18		<b>All the areas to inspect each other's progress monitored under Environment Department, HQ</b> <p>A) Schedule and teams already formulated for inspections</p>	✓	-	-	Area Inspection Team	-	Complied
19		<b>An Inspecting team to be formed consisting local activist/NGO for regular inspection of above practices</b> <p>A) Area Environment Committee to be formulated for monitoring of Environment Compliances (1 Month)</p>	✓	-	-	Area Environment Committee	-	Complied. Environment cell and team made by Environment dept, koyla Bhawan
20	Water Environment	<b>Township wise STP/ETP</b> <p>A) STP will be installed in Koyla Nagar, Jagjeevan Nagar with 2 MLD capacity <b>DMC will collect septage for whole Jharla and Koyla Nagar, Bhuli Township</b></p> <p>B) <i>Cost Estimate:</i> CED, HQ (3 Months)</p> <p>C) <i>Capital Indent:</i> CED, HQ (2Months)</p> <p>D) <i>Approvals/Tender/ Work start and completion:</i> CED,HQ (12 Months)</p>			✓	GM (Civil)	Capital Budget: 3.85 crores	NA
21		<b>Workshop effluents treatment</b> <p>A) Oil &amp; Grease Trap</p> <p>B) <i>Cost Estimate:</i> Workshop In-charge (2 Months)</p> <p>C) <i>Capital Indent:</i> Workshop in-charge &amp; Area Civil Engineer (2Months)</p> <p>D) <i>Approvals/Tender/ Work start and completion:</i> CED, HQ (8 Months)</p>	-	✓	-	<ul style="list-style-type: none"> <li>Area Environment Manager</li> <li>Workshop Incharge</li> <li>HOD (Env) BCCL</li> </ul>	Capital Budget: Rs 5 crores	Oil & Grease trap present in Muraidih Workshop. Letter given to DECO outsourcing for the making a oil & grease trap in their workshop

SL No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
22		<b>Garland Drains/Retaining Walls around OB Dumps</b> A) <i>Cost Estimate:</i> Area Civil Engineer & Area Survey officer ( <b>2 Months</b> ) B) <i>Capital Indent:</i> Area Civil Engineer, Area Environment Manager & Area Survey Officer ( <b>2Months</b> ) C) <i>Approvals/Tender/ Work start and completion:</i> CED, HQ ( <b>8 Months</b> )	-	✓	-	<ul style="list-style-type: none"> <li>Area Civil Manager</li> <li>Area GM BCCL</li> </ul>	Capital Budget 2.00 crores	1.5 km garland drain available in Muraidih colliery. In phularitand colliery, garland drain made along the leasehold boundary
23	Othrs	<b>Biodiversity</b> Plantation over OB dumps/Backfilled Areas/ Avenue & Boundary Plantation  स्नेह स्मृति उपवन shall be developed in all areas	✓ Eco-restoration with three tier plantation practiced. For 2019-20, plantation of area of 54 Ha will be done by State Forest Department.	✓	✓	<ul style="list-style-type: none"> <li>HOD(Env)</li> <li>Area GM BCCL</li> </ul>	Revenue Budget Plantation: 5 crores	Plantation work in progress. One new smriti upvan is taken up for the development in Muraidih Workshop A Estimate of Rs 2,38,843 for 350 Gabion plantation along the haul roads of muraidih and phularitand colliery Ref no:- GM/AR-1/Civil/2019/01 dtd
24		<b>Mechanical Sweeper</b> Proposal: CSR Deptt. Handed over to Dhanbad Municipal Corporation	-	✓	-	Dhanbad Municipal Corporation	CSR Budget	NA



# ACTION PLAN FOR ENVIRONMENT CLEARANCE COMPLIANCE IN RESPECT OF B-II AREA

Sl No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
1	Air Pollution Control measures	<b>Covered Transportation</b> D) Responsibility of CISF personnel appointed at weigh-bridge will be to maintain a Register for tarpaulin covering of coal loaded trucks. E) GMs of respective areas will insure the implementation of the above within 15 days of order/Action Plan released. F) <b>CMC Deptt:</b> New contracts should have penal provisions for violation of Environmental Guidelines	✓ <b>3 Months</b> <i>Ensuring proper mechanism of inspection and implementation of Covered truck is in Place</i>  <b>Continuing</b>	-	-	<ul style="list-style-type: none"> <li>Area Environment Engineer</li> <li>Area GM</li> <li>HOD(Env), HQ BCCL</li> </ul>	NA	Asst. Commandant is requested to ensure Covered transportation. Also Asst Manager (Env) visited CISF post at weigh-bridge and instructed the staff on duty to ensure Covered transportation.
2		<b>Permanent Pucca Transportation Road</b> E) Roads under BCCL will be Paved/Black topped in Non-Coal Bearing Area F) <i>Cost Estimate:</i> Area Civil Engineer ( <b>4 Months</b> ) G) <i>Capital Indent:</i> Area Civil Engineer (3 Months) H) <i>Approvals/Tender/ Work start and completion:</i> Area Civil Deptt. & CED, HQ ( <b>12 Months</b> )	-	-	✓	<ul style="list-style-type: none"> <li>Area Civil Engineer</li> <li>Area GM BCCL</li> </ul>	Capital Budget Respective Areas 3 crores	Proposal moved vide file /no. B-II Area office/GM/Civil/2018-19/768 dt 06/09/19 Currently it is at HQ.
3		<b>Drilling with Dust extractor/wet drilling</b> E) All Existing drills are equipped with dust containment or water injection system. All new procurements of drills shall be with dust containment system. F) <i>Cost Estimate:</i> Excavation Deptt. G) <i>Capital Indent:</i> Excavation Deptt. H) <i>Approvals/Tender/ Work start and completion:</i> E&M Deptt.		✓ At present no drills procurement is in-line.		<ul style="list-style-type: none"> <li>GM Excavation</li> <li>Area GM BCCL</li> </ul>	- Capital Budget will be reappor tioned as required	Indent for arrangement of wet drilling for remaining 1 drill is made vide indent no.2126 dt 26.06.19

Sl No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
4		<b>Fixed Sprinkling arrangements at Siding (preferably at height)</b> <b>E)</b> Fixed sprinklers shall be installed <b>F) Cost Estimate:</b> Siding in-charge & Area E&M Manager, E&M In-charge Washery (3 <b>Months</b> ) <b>G) Capital Indent:</b> Colliery Manager & Area E&M Manager, Area Env Engineer/ Project officer (Washery) (2 <b>Months</b> ) <b>H) Approvals/Tender/ Work start and completion:</b> Area E&M Deptt. & MM deptt, HQ (7 <b>Months</b> )	-	✓	-	<ul style="list-style-type: none"> <li>Area GM</li> <li>GM WCD</li> <li>HOD(Env)</li> </ul> BCCL	Capital Budget Environment Head: 2.5 Crores. Othr Heads : 6.5 Lakhs	Cost estimate is under preparation with E&M department
5		<b>Overhead sprinklers at Loading site</b> <b>E)</b> At loading points overhead water showering arrangement shall be provided. <b>F) Cost Estimate:</b> Colliery Engineer & Area E&M Manager (2 <b>Months</b> ) <b>G) Capital Indent:</b> Colliery Manager & Area E&M Manager (2 <b>Months</b> ) <b>H) Approvals/Tender/ Work start and completion:</b> Area E&M Deptt. & Project officer (7 <b>Months</b> )	-	✓	-	<ul style="list-style-type: none"> <li>Project Officer</li> <li>Area GM</li> <li>HOD(Env)</li> </ul> BCCL	Capital Budget Environment Head: 2.5 Crores.	After inspection site is finalised and Cost estimate is under preparation with E&M department
6		<b>Mobile sprinklers/ Mist Sprinkler</b> <b>E)</b> Mobile sprinklers trips will be increased and Mist sprinklers will be done <b>F) Cost Estimate:</b> E&M Deptt., HQ(3 <b>Months</b> ) <b>G) Capital Indent:</b> Area E&M Manager (2 <b>Months</b> ) <b>H) Approvals/Tender/ Work start and completion:</b> MM deptt, HQ (6 <b>Months</b> )	-	✓	-	<ul style="list-style-type: none"> <li>GM E&amp;M</li> </ul>	Capital Budget Environment Head: 2.5 Crores	Mobile water sprinklers trips is increased
7		<b>Wheel washing ditches after weigh-bridge for tire cleansing</b> <b>E)</b> Wheel washing arrangement shall be provided at Weigh- Bridge site	-	✓	-	<ul style="list-style-type: none"> <li>Project Officer</li> <li>Area GM</li> <li>Project Officer, Washery</li> </ul>	Capital Budget New commitment	Cost estimate is done. Proposals for wheel washing ditches is initiated vide GM/B-II/Civil/19-20/108 dt.07.09.19.

Sl No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
		<b>F) Cost Estimate:</b> Colliery Manager & Area Civil Engineer (32 Months) <b>G) Capital Indent:</b> Colliery Manager, Project officer & Area Civil Engineer (2Months) <b>H) Approvals/Tender/ Work start and completion:</b> Area E&M Deptt. & MM deptt, HQ (6 Months)				BCCL		
8		<b>Enclosure of CHP/covered crushing</b> <b>E)</b> CHP/Crushers shall be covered <b>F) Cost Estimate:</b> Area Manager Transport & Area E&M Manager (2 Months) <b>G) Capital Indent:</b> Colliery Manager & Project officer (2Months) <b>H) Approvals/Tender/ Work start and completion:</b> Area E&M Deptt. & MM deptt, HQ (6 Months)	-	✓	-	<ul style="list-style-type: none"> <li>Area Manager transport</li> <li>Area Manager Sales</li> </ul> BCCL	Capital Budget New Commitment	Proposal for same has initiated and is at finance dept for BC.
9		<b>Grass covering over inactive OB dumps.</b> <b>E)</b> Inactive OB dumps shall be identified and will be covered with grass <b>F) Cost Estimate:</b> Area Environment Engineer (2 Months) <b>G) Proposal:</b> HQ Env Deptt. (2Months) <b>H) Approvals/Tender/ Work start and completion:</b> HQ, Env Deptt. (6 Months)	-	✓ Continuing	✓	<ul style="list-style-type: none"> <li>HOD (Env)</li> <li>SRM (Min), Eco-Restoration Team</li> <li>Area Env Manager</li> </ul>	Revenue Budget Rs 5 crores	Seed Ball spreading at OB Dump completed.
10		<b>Building boundaries around railway siding made of coconut choirs or GI sheets.</b> <b>E)</b> Railway sidings will be surrounded with boundaries of GI Sheets/Coconut coir/Jute Cloths <b>F) Cost Estimate:</b> Siding in-charge & Area Civil Manager (2 Months) <b>G) Capital Indent:</b> Colliery Manager & Project officer (2Months)	-	✓	-	<ul style="list-style-type: none"> <li>Area GM</li> <li>HOD(Env)</li> </ul> BCCL	Capital Budget New Commitment	Cost estimate is under preparation with E&M department .Indent will be made soon.

Sl No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
		<i>H) Approvals/Tender/ Work start and completion: Area E&amp;M Deptt. &amp; MM deptt, HQ (6 Months)</i>						
11		<b>Introducing Bioswale as Pilot Project</b> D) Cost Estimate: GM Civil, CED, HQ E) Capital Indent: GM Civil, CED,HQ F) Approval/Tender/Work start and completion: CED, HQ			✓	<ul style="list-style-type: none"> <li>Concerned Area GM</li> <li>GM Civil</li> <li>HOD(Env)</li> </ul>	Capital Budget New Commitment	Discussed with HoD for same in meeting on 02.08.19 at AGM Chamber
12		<b>Fiery coal/OB should be dumped in-pit/ wetted completely before transporting</b> E) Fiery coal shall not be transported on elevated OB dumps and shall be dumped in-pit/ transported after complete wetting F) Project officer & Area manager planning to site the location prior to excavating fiery coal/OB. G) Water Pools to be used for drenching of fire and wetting of fiery coal/OB H) Strict instructions to be issued from Functional Technical Directors.	✓	-	-	<ul style="list-style-type: none"> <li>Area GM</li> <li>HOD (Env)</li> </ul>	-	NA
13		<b>Pollution under control Certificate to be ensured by Transporter/ BCCL transport in-charge</b> C) CMC Deptt: To be included in contracts of transporter D) Area Transport In-Charge shall ensure PUC is issued to all plying vehicles	✓	-	-	Area Manager Transport HOD(Env)	-	Discussed with HoD for same in meeting on 02.08.19 at AGM Chamber
14	<b>Inspection/ Monitoring measures/ Complaint Redressal</b>	<b>AAQ Monitoring</b> C) 39 Air and Noise Monitoring Stations in JCF D) Stations established in consultation with JSPCB	✓ Ongoing	-	-	<ul style="list-style-type: none"> <li>CMPDIL, RI-II, Dhanbad</li> </ul>	Revenue Budget Rs 3.5 crores	Ongoing
15		<b>COAAQMS,</b>	-		✓	<ul style="list-style-type: none"> <li>CMPDIL</li> <li>HOD(Env)</li> </ul>	Capital Budget	NA

Sl No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
		E) COAAQMS shall be installed at Jagjeevan Nagar F) <i>Cost Estimate</i> : CMPDIL, RI-II, Dhanbad (2 Months) G) <i>Capital Indent</i> : CMPDIL, RI-II, Dhanbad (2Months) H) <i>Approvals/Tender/ Work start and completion</i> : CMPDIL, RI-II, Dhanbad (6 Months)  <b>Online PM10 Analyser</b> Online PM10 Analyzer shall be installed at Mines and Railway sidings D) <i>Cost Estimate</i> : Area Environment Manager (2 Months) E) <i>Capital Indent</i> : Colliery Manager (2Months) F) <i>Approvals/Tender/ Work start and completion</i> : MM Deptt, HQ (6 Months)		✓		BCCL	Rs 3 crores	Location for PM10 analyzer finalized. Being done at HQ level.
16		<b>Source Apportionment Study</b> Work awarded to NEERI, Nagpur on 12.05.2018. Monitoring work started Final report shall be submitted in One year	-	✓	-	HOD(Env)	Revenue Budget Rs 1.41 Crores	By HQ
17		<b>HQ Environment Deptt. review and report the status of compliances to FDs and Board</b> <ul style="list-style-type: none"> <li>Structured Meetings with All Areas/washeries</li> <li>Inspection of Areas by HQ, Compliance Team</li> </ul>	✓ Ongoing	-	-	SRM (Min) HOD(Env)	-	By HQ
18		<b>All the areas to inspect each other's progress monitored under Environment Department, HQ</b> B) Schedule and teams already formulated for inspections	✓	-	-	Area Inspection Team	-	Ongoing

Sl No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
19		<b><i>An Inspecting team to be formed consisting local activist/NGO for regular inspection of above practices</i></b> <b>B)</b> Area Environment Committee to be formulated for monitoring of Environment Compliances (1 Month)	✓	-	-	Area Environment Committee	-	Ongoing
20	Water Environm ent	<b><i>Township wise STP/ETP</i></b> <b>F)</b> STP will be installed in Koyla Nagar, Jagjeevan Nagar with 2 MLD capacity <b>DMC will collect septage for whole Jharia and Koyla Nagar, Bhuli Township</b> <b>G)</b> <i>Cost Estimate:</i> CED, HQ (3 Months) <b>H)</b> <i>Capital Indent:</i> CED, HQ (2Months) <b>I)</b> <i>Approvals/Tender/ Work start and completion:</i> CED,HQ (12 Months)			✓	GM (Civil)	Capital Budget: 3.85 crores	NA
21		<b><i>Workshop effluents treatment</i></b> <b>E)</b> Oil & Grease Trap <b>F)</b> <i>Cost Estimate:</i> Workshop In-charge (2 Months) <b>G)</b> <i>Capital Indent:</i> Workshop in-charge & Area Civil Engineer (2Months) <b>H)</b> <i>Approvals/Tender/ Work start and completion:</i> CED, HQ (8 Months)	-	✓	-	<ul style="list-style-type: none"> <li>Area Environment Manager</li> <li>Workshop Incharge</li> <li>HOD (Env) BCCL</li> </ul>	Capital Budget: Rs 5 crores	Oil & Grease trap present in Workshop
22		<b><i>Garland Drains/Retaining Walls around OB Dumps</i></b> <b>D)</b> <i>Cost Estimate:</i> Area Civil Engineer & Area Survey officer (2 Months) <b>E)</b> <i>Capital Indent:</i> Area Civil Engineer, Area Environment Manager & Area Survey Officer (2Months) <b>F)</b> <i>Approvals/Tender/ Work start and completion:</i> CED, HQ (8 Months)	-	✓	-	<ul style="list-style-type: none"> <li>Area Civil Manager</li> <li>Area GM BCCL</li> </ul>	Capital Budget 2.00 crores	Proposal is initiated vide GM/B-II/Civil/19-20/107 dt.07.09.19



Sl No.	Type of Action	Activities and Executing Responsibilities	Timeline			Monitoring and Reporting	Budget	Status
			S.T (3 to 6 M)	MT (12 M)	LT (24 M)			
23	<b>Othrs</b>	<b><i>Biodiversity</i></b> Plantation over OB dumps/Backfilled Areas/ Avenue & Boundary Plantation  स्नेह स्मृति उपवन shall be developed in all areas	✓ Eco-restoration with three tier plantation practiced. .	✓	✓	<ul style="list-style-type: none"> <li>HOD(Env)</li> <li>Area GM BCCL</li> </ul>	Revenue Budget Plantation: 5 crores	Plantation work completed on old eco sites and along transportation route. Sneh-smriti upvan is being developed.
24		<b><i>Mechanical Sweeper</i></b> Proposal: CSR Deptt. Handed over to Dhanbad Municipal Corporation	-	✓	-	Dhanbad Municipal Corporation	CSR Budget	NA