

भारत कोकिंग कोल लिमिटेड

एक मिनिरल कम्पनी
(कोल इंडिया लिमिटेड का एक अंग)

**महाप्रबंधक का कार्यालय,
चाँच विक्टोरिया क्षेत्र**

पि.ओ.-बराकर, जिला - पं.बर्धमान पं.बंगाल (
पिन - 713324 दूरभाष - 0341-2520061/62,
पंजीकृत कार्यालय :कोयला भवन, कोयला नगर, धनबाद -
826005 (झारखण्ड) ,
CIN: U10101JH1972GOI000918



Bharat Coking Coal Limited

A MINI RATNA Co.

(A Subsidiary of Coal India Ltd)

**Office of the General Manager,
Chanch Victoria Area**

P.O.-BARAKAR, DIST-PAS.BARDHAMAN(W.B.)

PIN- 713324, TeL.0341-2520061/62

Regd.Off: KoylaBhawan, Koyla Nagar, Dhanbad-826005,

CIN: U10101JH1972GOI000918,

Ref. No: BCCL/CV/ ENVT/2023/14

Date: 31.05.2023

To,
The Director,
Ministry of Environment, Forest, Climate Change,
Integrated Regional Office,
2nd Floor, Headquarter- Jharkhand State Housing Board,
Harmu Chowk, Ranchi
Jharkhand- 834002

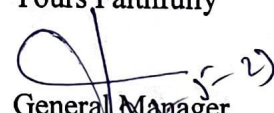
**Sub:-Six Monthly Report On Implementation Of Environmental Measures For The Period
From October 2022 to march 2023 In Respect Of EC of Cluster-XVI Group Of Mines
Of BCCL.**

Dear Sir,

Enclosed please find herewith the six monthly reports on implementation of environmental protection measure for the period from October 2022 to march 2023 in respect of Cluster-XVI group of mines of BCCL.

Hope you will find the same in order.

Yours Faithfully


General Manager
Cluster XVI, CV Area

- CC to: - (1) The Director 1A monitoring cell, Paryavaran Bhawan CGO Complex, New Delhi-110003
(2) The Incharge, Zonal Office, CPCB, Southern Conclave, Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road Kolkata - 700107 (W.B)
(3) The Regional Officer, JSPCB, Hirapur, Dhanbad-826001, Jharkhand
(4) HOD (Environment), BCCL, Koyla Bhawan, Dhanbad.
(5) Staff Officer (Mining), CV Area.
(6) Project Officer, DBOCP
(7) Nodal Officer (Env), CV Area.
(8) Office Copy

PROGRESSIVE COMPLIANCE OF EC CONDITIONS OF CLUSTER-XVIEC

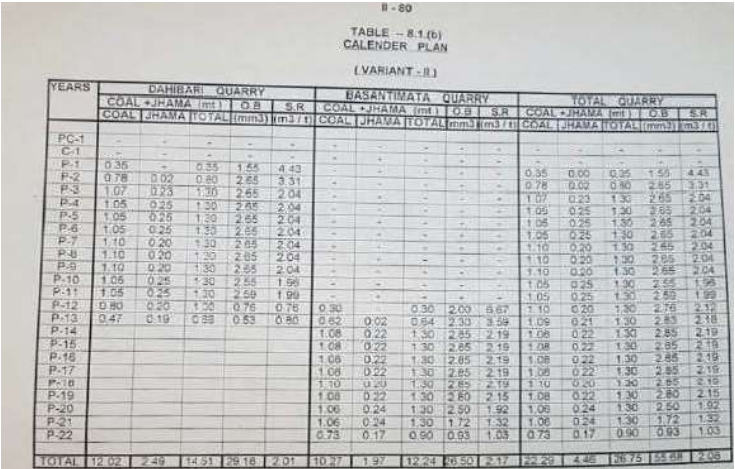
order no-J-11015/185/2010-IA.II(M) Dated 06.02.2013

Upto March 2023

Sl. no.	A. Specific Conditions by MOEF:	Progressive Compliance																		
i	The maximum production shall not exceed beyond that for which environmental clearance has been granted for the 5 mines of cluster XVI as below:	The approved peak production of coal for Cluster XVI is 1.963 MTPA. The production for the period between April 1st, 2022 to March 31st, 2023 is 0.62 MT. The total production of coal for cluster XVI for the last five financial years are as followed: <table><tr><th>S.No.</th><th>FY</th><th>Production (MTPA)</th></tr><tr><td>1.</td><td>2018-19</td><td>1.527</td></tr><tr><td>2.</td><td>2019-20</td><td>0.782</td></tr><tr><td>3.</td><td>2020-21</td><td>0.819</td></tr><tr><td>4.</td><td>2021-22</td><td>0.780</td></tr><tr><td>5.</td><td>2022-23</td><td>0.625</td></tr></table>	S.No.	FY	Production (MTPA)	1.	2018-19	1.527	2.	2019-20	0.782	3.	2020-21	0.819	4.	2021-22	0.780	5.	2022-23	0.625
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5.	2022-23	0.625																		
ii	All the void/water bodies should be backfilled up to ground level and no OB dump at the end of mining.	It is a Post-mining condition. It will be duly complied at the suitable mining stage. Picture of inoperative Junkunder OCP Mine which is serving as water body for local community after filtration which is hereby enclosed as Annexure 1. 																		
iii	Extensive plantations should be provided on either side of River;	Extensive plantation on both sides of Khudia River is already developed. Photographs of the same have been enclosed as Annexure 2. 																		

iv	Impact of mining on ground water of the area (Impact Zone) should be provided;	There is no declining trend in the Groundwater level and the time series data for groundwater till FY2022-23 have been attached as Annexure 3 .																																				
v	A Garland drain should be provided	Garland drain is provided along the periphery of Kalyanchak OB Dump of DBOCP. Photographs of the same have been enclosed as Annexure 4. 																																				
vi	Excess water from mine after treatment should be supplied to the villagers.	At present, excess water from mine is supplied to the villages through settling pond. Location of ponds is at the south of Palasia in line and Kumarkuli Basti. List of beneficiary villages along with mine water discharge data are attached as Annexure 5.																																				
vii	Rejects of washery along with dry carbon slurry should be utilized in power plant and other recognized vendors.	Dahibari Washery rejects are being kept separately and are being sold through auctioning process on portal (https://www.mstcindia.co.in) to the recognized vendors.																																				
viii	A time schedule for filling of existing and abandoned quarries be done.	Old abandoned Quarry no. 1, 2, 3 & 3/4 of Kalimati Seam at Basantimata Mine has been filled up to ground level. Abandoned quarry of NLOCP, JOCP & KOCP have been filled up. The progressive reclamation is being undertaken as per approved MCP. Yearwise Backfilling till now is as below:- <table border="1"> <thead> <tr> <th>S/No.</th><th>Year</th><th>Quantity (Lakh M³)</th></tr> </thead> <tbody> <tr><td>1.</td><td>2012-13</td><td>7.25</td></tr> <tr><td>2.</td><td>2013-14</td><td>55.00</td></tr> <tr><td>3.</td><td>2014-15</td><td>85.75</td></tr> <tr><td>4.</td><td>2015-16</td><td>5.00</td></tr> <tr><td>5.</td><td>2016-17</td><td>7.00</td></tr> <tr><td>6.</td><td>2017-18</td><td>5.00</td></tr> <tr><td>7.</td><td>2018-19</td><td>2.00</td></tr> <tr><td>8.</td><td>2019-20</td><td>Nil</td></tr> <tr><td>9.</td><td>2020-21</td><td>14.51</td></tr> <tr><td>10.</td><td>2021-22</td><td>18.87</td></tr> <tr><td>11.</td><td>2022-23</td><td>12.58</td></tr> </tbody> </table>	S/No.	Year	Quantity (Lakh M ³)	1.	2012-13	7.25	2.	2013-14	55.00	3.	2014-15	85.75	4.	2015-16	5.00	5.	2016-17	7.00	6.	2017-18	5.00	7.	2018-19	2.00	8.	2019-20	Nil	9.	2020-21	14.51	10.	2021-22	18.87	11.	2022-23	12.58
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ix	The measure identified in the environmental plan for cluster XVI group of mine and the	Master Plan activities are dovetailed with compliance of environmental clearance conditions 420 quarters have already																																				

	conditions given in this environmental clearance letter shall be dovetailed to the implementation of the Jharia Action Plan.	been constructed and 100 families have been relocated to the newly constructed quarters.
x	As there is no fire in Cluster XVI but the measure should be adopted by proponent to control spread of neighboring fire to this Cluster XVI. The proponent shall prepare time-series maps of the Jharia Coal fields through NRSA to monitor and prevent fire problems in the Jharia Coal fields 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 XIV shall be undertaken.	Time series maps are prepared regularly and the reports have been generated in the year 2014 and 2018. Latest report of Jan 2018 of NRSC is attached as Annexure 6 .
xi	Underground mining should be taken up after completion of reclamation of Open cast mine area after 2 years.	Underground mining will be taken up after reclamation of OC mine.
xii	No mining shall be undertaken where underground fires continue. Measure shall be taken to prevent/ check such fire including in old OB dump	No mining is being undertaken where underground fire continues. Fire is liquidated by excavation of fiery coal and thereafter coal as well as OB Dump excavated is cooled by water. SOP exists for handling/fighting fire. The same has been attached as Annexure 7 .
xiii	A part of cluster XVI is under Barakar River and Damodar River. It was clarified that although the mine is underground, there is no coal underneath River Damodar, which would be mined. The Committee desired that the data of bore wells near River Damodar require to be monitored for permeability and seepage of water of River Damodar.	At present there is no underground mining operation below the River Damodar & Barakar. Working underground mine has not reached near river Damodar & Barakar and it is more than 2000 mtr. away from river bed, far away from impact of river. However, a study has been done by CMPDI which is attached as Annexure 8 .
xiv	The rejects of washeries in Cluster -XVI should be sent to FBC based plant.	Dahibari Washery rejects are being kept separately and are being sold through auctioning process on portal (https://www.mstcindia.co.in) to recognized vendors.

xv	There shall be no external OB dumps. OB produce from the whole cluster will be 29.01 Mm³. OB from One Patch OCP 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.	Action is being taken as specified in EMP for Backfilling of OB concurrent with mining. No fresh land is used for OB dumping. Proper vegetation is being developed on the OB dump to avoid erosion of soil and gully formation and also to stabilize sufficiently the OB slope. Pictures of ecologically restored OB Dumps under Cluster XVI have been attached as Annexure 9. All the OB dumps (seven) are within the leasehold area and are on de-coaled area.
xvi	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-XVI shall be drawn up and implemented.	Detailed Calendar plan of production is prepared and implemented. The schedule as per approved MCP is being followed. Please refer the calendar plan attached as Annexure 10.
		 TABLE - R.1 (b) CALENDAR PLAN (VARIANT - II) DAHIBARI QUARRY BASANTIMATA QUARRY TOTAL QUARRY COAL - JHAMA (mt) O.B. S.R. COAL - JHAMA (mt) O.B. S.R. COAL - JHAMA (mt) O.B. S.R. COAL - JHAMA TOTAL (mm3) (mm3) (mm3) COAL - JHAMA TOTAL (mm3) (mm3) (mm3) COAL - JHAMA TOTAL (mm3) (mm3) (mm3) YEARS PC-1 C-1 P-1 P-2 P-3 P-4 P-5 P-6 P-7 P-8 P-9 P-10 P-11 P-12 P-13 P-14 P-15 P-16 P-17 P-18 P-19 P-20 P-21 P-22 TOTAL
xvii	The void in 5 ha area shall be converted into a water reservoir of a maximum depth of 15-20 m in post-mining stage 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 biologically reclaimed with plantation and may be used for pisciculture.	It is a Post-mining closure requirement and will be duly complied.
xviii	Mining shall be carried out as per statuette from the streams/nalas flowing within the lease and maintaining a safe distance from the Nalas flowing along the lease boundary. A safety barrier of a minimum 60 m width shall be maintained along the nalas/water bodies. The small water bodies in OC shall be	Mining is being carried out as per Statute from the streams/Nalas flowing within the lease and maintaining a safe distance (>60 m) from the nalas flowing along the lease boundary.

	protected to the extent feasible and the embankment proposed along water body shall be strengthened with stone pitching.																																			
xix	Active OB dumps near water bodies and rivers should be rehandled for backfilling abandoned mine voids. However, those which have been biologically reclaimed need not be disturbed.	Presently there are no active OB dumps near water bodies. The earlier OB Dump are already stabilized biologically and hence not disturbed. Further action has been taken for their eco-restoration work as per Road Map prepared by FRI, Dehradun. Photo of the same has been attached as Annexure 9 .																																		
xx	Thick green belt shall be developed along undisturbed areas, mine boundary and in mine reclamation. During post mining stage, a total of 242.09 ha area would be reclaimed by planting native species in consultation with the local DFO/Agriculture Department/institution with the relevant discipline. The density of the trees shall be around 2500 plants per ha.	Year wise plantation (Proposed) is being done as per following plan:- <table><tr><th>Year</th><th>Biologically Reclaimed Area</th></tr><tr><td>2013-14</td><td>1.0 Ha. (completed)</td></tr><tr><td>2014-15</td><td>4.6 Ha. (completed)</td></tr><tr><td>2015-16</td><td>4.0 Ha. (completed)</td></tr><tr><td>2016-17</td><td>12.5 Ha. (completed)</td></tr><tr><td>2017-18</td><td>7.0 Ha. (completed)</td></tr><tr><td>2018-19</td><td>05.0 Ha. (completed)</td></tr><tr><td>2019-20</td><td>10.0 Ha. (Completed)</td></tr><tr><td>2020-21</td><td>05.50 Ha. (Completed)</td></tr><tr><td>2021-22</td><td>05.0 Ha. (Completed)</td></tr><tr><td>2022-23</td><td>0.5 Ha (completed)</td></tr><tr><td>2023-24</td><td>05.0 Ha.</td></tr><tr><td>2024-25</td><td>05.0 Ha.</td></tr><tr><td>2025-26</td><td>25.0 Ha.</td></tr><tr><td>2026-27</td><td>35.0 Ha.</td></tr><tr><td>2027-28</td><td>40.0 Ha.</td></tr><tr><td>2028-29</td><td>73.0 Ha.</td></tr></table> Total mine boundary of Basantimata Dahibari Colliery is approximately 15 km out of which 12 km approx. is already covered with plantation. Rest of the boundary will be duly covered in phase-wise manner.	Year	Biologically Reclaimed Area	2013-14	1.0 Ha. (completed)	2014-15	4.6 Ha. (completed)	2015-16	4.0 Ha. (completed)	2016-17	12.5 Ha. (completed)	2017-18	7.0 Ha. (completed)	2018-19	05.0 Ha. (completed)	2019-20	10.0 Ha. (Completed)	2020-21	05.50 Ha. (Completed)	2021-22	05.0 Ha. (Completed)	2022-23	0.5 Ha (completed)	2023-24	05.0 Ha.	2024-25	05.0 Ha.	2025-26	25.0 Ha.	2026-27	35.0 Ha.	2027-28	40.0 Ha.	2028-29	73.0 Ha.
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xxi	The road should be provided with avenue plantation on both sides as trees act as sink of carbon and other pollutant.	1700 gabion trees were planted through State Forest Department along the transportation road and siding in cluster XVI. Photograph of the same has been attached as Annexure 11 .																																		

		
xxii	Specific mitigative measures identified for the Jharia Coalfields in the Environmental Action Plan prepared for Dhanbad as a critically polluted area are relevant for Cluster-XVI and shall be implemented.	Dhanbad Action Plan has been prepared in consultation with Jharkhand Pollution Control Board which includes covering of trucks etc. are complied. Activities mentioned in Dhanbad Action Plan and their implementation status relevant to Cluster XVI is attached herewith as Annexure 12.
xxiii	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 (fuelwood, coal, flyash from TPPs, silica from natural dust, etc) and a Source Apportionment Study should be got carried out for the entire Jharia Coalfields. Mineralogical composition study should be undertaken on the composition of the suspended particulate matter (PM₁₀ and PM_{2.5}) in Jharia Coalfields and also quantified. These studies would help ascertain source and extent of the air pollution, based on which appropriate mitigative measures could be taken.	The Final report sent by NEERI is attached as Annexure 13.
xxiv	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.	No ground water is being utilized for the purpose of industrial use of the water and the level of ground water is not declining. Mine water has been channelized through pipelines and through discharge in to the ponds for its use for the community and irrigation purposes. Jhunkunder OCP Mine which is serving as water body for local community after filtration. During summer season filter water as well as raw water is being supplied through water tanker to local adjacent villages wherever required. Pressure Filters have been installed for the filtration of mine water being supplied to nearby habitat. Already 6

		filters have been installed and are in operation.
xxv	Regular monitoring of groundwater level and quality of the study area shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality including Arsenic and Fluoride during the month of May. Data thus collected shall be submitted to the Ministry of Environment & Forest and to the Central Pollution Control Board/SPCB quarterly within one month of monitoring. Rainwater harvesting measures shall be undertaken in case monitoring of water table indicates a declining trend.	Ground water level and quality are being monitored by CMPDIL Ranchi. Analysis report for the Q.E. in March 2023 is enclosed as <u>Annexure 14</u>. One Nos. of Piezometric Well has been constructed in Cluster XVI. Photograph of the same is enclosed as <u>Annexure 14A</u>. However, Ground water level is not declining. As of now water accumulated in quarries during monsoon is being extracted and being used in recharging of nearby ponds.
xxvi	Mine discharge waters 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.	The report of mine water discharge is uploaded on BCCL official website which is also given in the six monthly EC compliance report.
xxvii	ETP shall also be provided for workshop, and CHP, if any. Effluents shall be treated to conform to prescribed standards in case discharge into the natural water course.	Washing facility is available at the workshop for washing of vehicles has been attached with Oil and Grease trap at Dahibari Workshop. Photograph of O&G T is attached as <u>Annexure 15</u> In CHP, water is used for arresting the crushed coal fines, which is ultimately let into a mine sump. The water from the sump is again recycled into the CHP. No effluents are discharged into the natural water course.

		
xxviii	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.	There is no depillaring going on in underground mines of Cluster XVI, hence no mining induced subsidence is taking place. No subsidence has occurred during Environmental Clearance compliance period as of yet during the regular monitoring of subsidence by project officials. However subsidence due to illegal mining at Dumrijore under closed Chanch Colliery has been reported on 21.04.2022. Inspection report of the same is enclosed as <u>Annexure 16A</u> .
xxix	Sufficient coal pillars shall be left un-extracted around the air shaft (within the subsidence influence area) to protect from any damage from subsidence, if any.	No underground mining operation is now being undertaken. Also the conditions were duly complied when underground mining was operational.
xxx	High root density tree species shall be selected and planted over areas likely to be affected by subsidence.	No areas have been affected by subsidence. The eco-restoration activities include species which are having high root density. The comprehensive list of species planted at eco-restoration sites and certificate of them being high root density species has been attached as <u>Annexure 16</u> .
xxxi	Depression due to subsidence resulting in water accumulating within the low lying areas shall be filled up or drained out by cutting drains.	Thus, depression due to subsidence has not been observed by project officials during monitoring of subsidence. However subsidence due to illegal mining at Dumrijore under closed Chanch Colliery has been reported on 21.04.2022. Inspection report of the same is enclosed as <u>Annexure 16A</u> .
xxxii	Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the roads.	It is being followed. Sufficient barriers are left for saving the surface installation and infra structures as per the statute and DGMS guidelines.
xxxiii	No depillaring operations shall be carried out below the township/colony.	No depillaring operation is being carried out below the township/colony.
xxxiv	The Transportation Plan for	Presently tarpaulin covered coal transportation is being done as

	conveyor-cum-railforCluster-XVI 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. The Plan for conveyor-cum-railforCluster-XIV should be dovetailed with Jharia Action Plan. The road transpiration of coal during phase-I should be by mechanically covered trucks.	thereisnoOEM(originalequipmentmanufacturer)which supply mechanically covered trucks for coal transportation. The conveyor-cum-rail system installation study is being carried outby CMPDIL and will beimplemented in Phasell. FindbelowthetableofRoadandRailDispatchofcoal forFY 2022-23 fromtheminesof cluster XVI:- <table><tr><th colspan="4">FY2022-23</th></tr><tr><th></th><th>Road</th><th>Rail</th><th>Total</th></tr><tr><td>CoalDispatch (milliontonnes)</td><td>0.486</td><td>0.051</td><td>.537</td></tr><tr><td>%Share</td><td>90.5</td><td>09.5</td><td>100.0</td></tr></table>	FY2022-23					Road	Rail	Total	CoalDispatch (milliontonnes)	0.486	0.051	.537	%Share	90.5	09.5	100.0
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xxxv	Astudysouldbeinitiatedto analyzeextentofreductionin pollutionloadeveryyearby reducingroadtransport.	The study regarding pollution load inaspectof ClusterXVI has beendonebyCMPDI,Ranchi.TheReportisattachedas Annexure17.																
xxxvi	R&R of 1193 nosofPAF's involved. They should be rehabilitated at cost of Rs 10171.88 lakhs as per the approvedJhariaActionPlan.	The rehabilitation of 1193 PAF is being done by State Government Jharia Rehabilitation & Development Authority (JRDA)underJhariaActionPlan.Presentlytheyaresurveyingthe houseinClusterXVI.Finalreportonrehabilitationisyettobe submittedbyDistrictCollector,Dhanbad.																
xxxvii	Details of transportation, CSR, R&R and implementation of environmental action plan for eachofthe 17clusters should be broughtoutinabookletforand submittedtoMinistry.	Booklet on CSR, Transportation and R&R activities and implementation of environmental action plan is prepared and regularly maintained. The aforesaid Booklet is enclosed as Annexure 18.																
xxxviii	AdetailedCSRActionPlanshall be prepared for Cluster XVIcroupofmines.Specificactivitie s shall be identified for CSR of Rs 20.25/annum @ of Rs 5/ton ofcoal production. as recurring expenditure. The 242.09ha ofarea within Cluster XVI ML existing as waste land and not being acquired shall be put to productive use under CSR and developed with fruit bearing and other useful species for the local communities. Third party evaluation shall be got carriedout regularly for the proper implementation of activities undertaken in the project area under CSR. Issue raised in the Public Hearing shall also be integratedwithactivitiesbeing takenupunderCSR.The details	Itis being complied.Since all theclustersareworking inclose vicinity,theCSR activities areundertaken atBCCLHQlevel.																

	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.																																																																																																																																																																																	
xxxix	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1:5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhubaneswar.	Time series map of Land use pattern in the Jharia Coal field has been carried out through CMPDI. Time Series map is attached as Annexure 19. The summary table is as followed: <table><tr><th colspan="7">Area Statistics</th></tr><tr><th colspan="3">Class</th><th colspan="2">Buffer Zone</th><th colspan="2">Core Zone</th></tr><tr><th>Level I</th><th>Level II</th><th>Color</th><th colspan="2">Area</th><th colspan="2">Area</th></tr><tr><th></th><th></th><th></th><th>Km²</th><th>% of Total</th><th>Km²</th><th>% of Total</th></tr><tr><td rowspan="4">Settlement</td><td>Rural</td><td></td><td>9.69</td><td>1.81</td><td>0.00</td><td>0.00</td></tr><tr><td>Urban</td><td></td><td>46.52</td><td>8.70</td><td>2.85</td><td>13.33</td></tr><tr><td>Industrial</td><td></td><td>3.56</td><td>0.67</td><td>0.05</td><td>0.22</td></tr><tr><td>Total Settlements</td><td></td><td>59.76</td><td>11.17</td><td>2.90</td><td>13.55</td></tr><tr><td rowspan="3">Forests</td><td>Dense Forest</td><td></td><td>9.75</td><td>1.82</td><td>0.18</td><td>0.85</td></tr><tr><td>Open Forest</td><td></td><td>35.54</td><td>6.65</td><td>0.66</td><td>3.11</td></tr><tr><td>Total (A)</td><td></td><td>45.30</td><td>8.47</td><td>0.85</td><td>3.96</td></tr><tr><td>Scrubs</td><td>Scrubs (B)</td><td></td><td>160.07</td><td>29.93</td><td>10.57</td><td>49.47</td></tr><tr><td rowspan="3">Plantations</td><td>Social Forestry</td><td></td><td>2.77</td><td>0.52</td><td>0.26</td><td>1.21</td></tr><tr><td>Plantation on OB Dump</td><td></td><td>3.33</td><td>0.62</td><td>0.32</td><td>1.50</td></tr><tr><td>Total Plantation (C)</td><td></td><td>6.10</td><td>1.14</td><td>0.58</td><td>2.72</td></tr><tr><td></td><td>Total Vegetation (A+B+C)</td><td></td><td>211.47</td><td>39.54</td><td>12.00</td><td>56.15</td></tr><tr><td rowspan="3">Agriculture</td><td>Fallow Land</td><td></td><td>72.93</td><td>13.64</td><td>0.55</td><td>2.58</td></tr><tr><td>Crop Land</td><td></td><td>12.28</td><td>2.30</td><td>0.45</td><td>2.10</td></tr><tr><td>Total Agriculture</td><td></td><td>85.21</td><td>15.93</td><td>1.00</td><td>4.68</td></tr><tr><td rowspan="3">Mining Area</td><td>Coal Quarry</td><td></td><td>3.11</td><td>0.58</td><td>0.50</td><td>2.35</td></tr><tr><td>Barren OB Dump</td><td></td><td>1.59</td><td>0.30</td><td>0.78</td><td>3.63</td></tr><tr><td>Total Mining Area</td><td></td><td>4.70</td><td>0.88</td><td>1.28</td><td>5.99</td></tr><tr><td rowspan="3">Waste Lands</td><td>Waste Land</td><td></td><td>89.54</td><td>16.74</td><td>0.81</td><td>3.80</td></tr><tr><td>Sand Body</td><td></td><td>6.42</td><td>1.20</td><td>0.51</td><td>2.39</td></tr><tr><td>Total Wastelands</td><td></td><td>95.96</td><td>17.94</td><td>1.32</td><td>6.19</td></tr><tr><td>Water Bodies</td><td>Rivers, Lakes, Nalas etc.</td><td></td><td>77.74</td><td>14.53</td><td>2.87</td><td>13.44</td></tr><tr><td></td><td>All Total</td><td></td><td>534.84</td><td>100.00</td><td>21.37</td><td>100.00</td></tr></table>	Area Statistics							Class			Buffer Zone		Core Zone		Level I	Level II	Color	Area		Area					Km ²	% of Total	Km ²	% of Total	Settlement	Rural		9.69	1.81	0.00	0.00	Urban		46.52	8.70	2.85	13.33	Industrial		3.56	0.67	0.05	0.22	Total Settlements		59.76	11.17	2.90	13.55	Forests	Dense Forest		9.75	1.82	0.18	0.85	Open Forest		35.54	6.65	0.66	3.11	Total (A)		45.30	8.47	0.85	3.96	Scrubs	Scrubs (B)		160.07	29.93	10.57	49.47	Plantations	Social Forestry		2.77	0.52	0.26	1.21	Plantation on OB Dump		3.33	0.62	0.32	1.50	Total Plantation (C)		6.10	1.14	0.58	2.72		Total Vegetation (A+B+C)		211.47	39.54	12.00	56.15	Agriculture	Fallow Land		72.93	13.64	0.55	2.58	Crop Land		12.28	2.30	0.45	2.10	Total Agriculture		85.21	15.93	1.00	4.68	Mining Area	Coal Quarry		3.11	0.58	0.50	2.35	Barren OB Dump		1.59	0.30	0.78	3.63	Total Mining Area		4.70	0.88	1.28	5.99	Waste Lands	Waste Land		89.54	16.74	0.81	3.80	Sand Body		6.42	1.20	0.51	2.39	Total Wastelands		95.96	17.94	1.32	6.19	Water Bodies	Rivers, Lakes, Nalas etc.		77.74	14.53	2.87	13.44		All Total		534.84	100.00	21.37	100.00
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xi	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five years 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	Progressive Mine closure plan as per approved MCP is under implementation. Final closure plan will be submitted at appropriate time. Ecological Restoration a mix of native species are being used in mine reclamation. Approval of Mine Closure Plan is attached as Annexure 20.																																																																																																																																																																																

	and at the post mining stage for habitat restoration.	
xii	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 for implementing environment policy and socio-economic issues and the capacity building required in this regard.	Executives with formal training in Environment discipline have been deputed at mine/project and area level duly supported by a multidisciplinary team at HQ level. Separate multidisciplinary environmental management cell at Area Level has already been established. Office Order of the same has been enclosed as Annexure 21 . Community development cadre at HQ level deals with the socio-economic issues and the capacity building.
xiii	Implementation of final mine closure plan for Cluster XVI, subject to obtaining prior approval of the DGMS in regard to mine safety issues.	Final Mine Closure Plan, will be prepared at appropriate time.
xlili	Corporate Environment Responsibility: a) The Company shall have a well laid down Environment Policy approved by the Board of Directors. b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions. c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished. d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliance/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.	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. http://www.bcclweb.in/environment/CEP_04.11.2019.pdf Complied. A hierarchical system of the company to deal with environmental issues from corporate level to mine level already exists. Flow chart is attached as Annexure 22. Internal Monitoring mechanism for compliance of EC/FC conditions has been approved by competent authority of BCCL. The details of the same have been attached as Annexure 23. Moreover, BCCL board reviews Environment management every quarter.

B	General Conditions by MOEF:	
i	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	Mining is being done as per approved mining guidelines of DGMS.
ii	No change in the calendar plan of production for quantum of mineral coal shall be made.	The approved peak production of coal for Cluster XVI is 1.963 MTPA . The production for the period between April 1 st , 2022 to March 31 st , 2023 is 0.625 MT.
iii	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM ₁₀ , PM _{2.5} , SO ₂ and NO _x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc. carried out at least once in six months.	The location of monitoring stations has been finalized after the consultation with JSPCB. The work of monitoring of ambient air quality was being done by CMPDI. Monitoring report is enclosed as Annexure-24. To maintain the air quality as per applicable standard following precaution measures is being taken:- 1. Sprinkling on Transportation road. 2. Covered truck transportation 3. Plantation 4. Dust controlled blasting and drilling. 5. Regular maintenance of machineries involved in mining. Monitoring of heavy metals such as As, Ni, Pb, Cr, etc. is being done by CMPDI. The report of the same has been attached as Annexure 14.
iv	Data on ambient air quality (PM ₁₀ , PM _{2.5} , SO ₂ and NO _x) and heavy metalssuch as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of sample through analysis from independent laboratories recognized under the EPA rules, 1986 shall be furnished as part of compliance report.	The monitoring is done by CMPDI which is NABL accredited lab. IIT (ISM), CIMFR & PDIL Sindri have been contacted to conduct random verification of samples.

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.	To control noise levels in the work environment vehicles are regularly maintained. The noise and vibration during blasting operations are controlled by using Electronic Detonators. Ambient Noise Level Test report is enclosed as Annexure-24. All the workers engaged in noisy operations are provided with the Ear plugs/muffs.
vi	Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	In CHP water is used for arresting the crushed coal fines, which is ultimately let into a mine sump. The water from the sump is again recycled into the CHP. No effluents are discharged into natural water course. The commissioning of workshop with washing facility at DBOCP and Oil & Grease trap has been completed.
vii	Vehicular emission shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	Vehicles are properly maintained and PUC is enforced. Only tarpaulin covered and optimally loaded vehicles are allowed to carry minerals. The PUC certificate has been enclosed as Annexure 25 .
viii	Monitoring of environmental quality parameters shall be carried out through the establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.	Monitoring work is being done by CMPDIL which has a laboratory recognized under EPA rules 1986.

ix	Personnel working in industry areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.	<u>Dust</u> is suppressed at source by water sprinkling. Dust masks are provided to persons working in industry areas. The details are given as follows: Training on safety & health is imparted at regular intervals (compulsorily once in 3 years) at VTCs. The relevant data is as follows: <table><tr><th>Year(Jan-Dec)</th><th>VTC</th><th>FY</th><th>DustMask</th></tr><tr><td>2013</td><td>471</td><td>2013-14</td><td>520</td></tr><tr><td>2014</td><td>555</td><td>2014-15</td><td>650</td></tr><tr><td>2015</td><td>686</td><td>2015-16</td><td>200</td></tr><tr><td>2016</td><td>758</td><td>2016-17</td><td>500</td></tr><tr><td>2017</td><td>580</td><td></td><td></td></tr></table>	Year(Jan-Dec)	VTC	FY	DustMask	2013	471	2013-14	520	2014	555	2014-15	650	2015	686	2015-16	200	2016	758	2016-17	500	2017	580		
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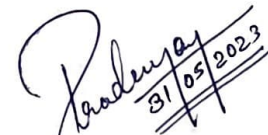
		<table><tr><td>2018</td><td>387</td><td>2017-18</td><td></td></tr><tr><td>2019</td><td>482</td><td>2018-19</td><td></td></tr><tr><td>2020</td><td>315</td><td>2019-20</td><td>500</td></tr><tr><td>2023</td><td>350</td><td>2020-21</td><td>1000</td></tr><tr><td></td><td></td><td>2022-23</td><td>1000</td></tr></table>	2018	387	2017-18		2019	482	2018-19		2020	315	2019-20	500	2023	350	2020-21	1000			2022-23	1000													
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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) for outsourced personnel and Periodical Medical Examination (PME) of all the BCCL personnel are carried out as per the Statutes and Director General of Mines Safety (DGMS) guidelines. The PME is conducted for each personnel once in 3 years. Records of IME & PME are also being maintained. The details are as follows: <table><tr><th>Year(Jan-Dec)</th><th>IME</th><th>PME</th></tr><tr><td>2013</td><td></td><td>740</td></tr><tr><td>2014</td><td>128</td><td>777</td></tr><tr><td>2015</td><td></td><td>682</td></tr><tr><td>2016</td><td>424</td><td>888</td></tr><tr><td>2017</td><td>231</td><td>711</td></tr><tr><td>2018</td><td>102</td><td>478</td></tr><tr><td>2019</td><td>35</td><td>930</td></tr><tr><td>2020</td><td>42</td><td>1140</td></tr><tr><td>2021</td><td colspan="2">894</td></tr><tr><td>2022</td><td colspan="2">606</td></tr></table>	Year(Jan-Dec)	IME	PME	2013		740	2014	128	777	2015		682	2016	424	888	2017	231	711	2018	102	478	2019	35	930	2020	42	1140	2021	894		2022	606	
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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.	Executives with formal training in Environment discipline have been deputed at mine/project and are adequately supported by a multidisciplinary team at HQ level. Separate multidisciplinary environmental management cell at Area Level has already been established. Office Order of the same has been enclosed as Annexure 21 . Community development cadre at HQ level deals with the socio-economic issues and the capacity building.																																	
xii	The funds earmarked for environmental protection measures shall be kept in separate accounts and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar.	It has been complied. The funds were earmarked as per EMP plan and kept in separate finance head for the expenditure to maintain environmental protection measures. Item wise expenditure on Environment protection measures is enclosed as Annexure 26.																																	

xiii	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in.	Project authorities advertised in two local newspapers widely circulated around the project, informing that the project has been accorded environmental clearance. Thus, this condition has been duly complied.
xiv	A copy of the environmental clearance letter shall be marked to the concerned 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.	It has been complied. A copy of the environmental clearance letter was marked to concerned Panchayat/Zila Parishad, Municipal corporation or Urban local body. The same has been attached as Annexure 27. The copy of the clearance letter is displayed on the company's website (http://www.bcclweb.in/?page_id=20425).
xv	A copy of the environmental clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.	It has been complied.
xvi	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM₁₀, PM_{2.5}, SO₂ and NO_x (ambient) and critical	It has been complied. The photo of the display of critical sectoral parameters at the entrance of mine office is attached as Annexure 28.

	ectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.	
xvii	The project proponent shall submit six monthly compliance reports on status of compliance 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.	It is being complied.
xviii	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.	Full cooperation is being provided for the regional office authorities for monitoring of Environmental Clearance conditions compliances.
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 .	Environmental Statement for each financial year is submitted to the regional office of Jharkhand State pollution control board by 30th June.


Project Officer
 BasantimataDahibari Colliery


Manager
 BasantimataDahibari Colliery


Nodal Officer (Env)
 CV Area


Staff Officer (Mining)
 CV Area


General Manager
 CV Area