

**HALF YEARLY**  
**ENVIRONMENT CLEARANCE COMPLIANCE REPORT**  
**OF**  
**CLUSTER 11**  
**J-11015/245/2011-IA.II(M)**  
**FOR THE PERIOD OF**  
**APRIL 2019 TO SEPTEMBER 2019**



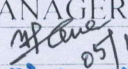
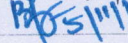
***Eastern Coalfields Limited***  
***(A subsidiary of Coal India Ltd.)***

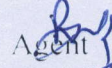


EASTERN COAL FIELDS LIMITED  
A subsidiary of Coal India Limited.  
Office of the Agent  
C L Jambad & Siduli , Kenda Area.  
P.O:- Bahula , Dist: - Burdwan.  
Pin:-713322. West Bengal

### UNDERTAKING

Information provided in Half yearly EC compliance report for the period April'19 to Sept'19 in respect of the following mines of Cluster no. 11 is true to the best of my knowledge:

SL NO.	MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1.	CL Jambad (UG)	TAPAN JANA	 05/11/19
2.	Siduli (UG + OC )	B. K. TIWARY	 05/11/19

  
Agent  
(CL Jambad & Siduli Mines)



EASTERN COAL FIELDS LIMITED  
A subsidiary of Coal India Limited.  
Office of the Agent  
Lower Kenda & Bahula, Kenda Area,  
P.O:- Bahula, Dist: - Burdwan.  
Pin:-713322. West Bengal

### UNDERTAKING

Information provided in Half yearly EC compliance report for the period April '19 to Sept'19 in respect of the following mines of Cluster no. 11 is true to the best of my knowledge:

SL NO.	MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1.	Lower Kenda (UG)	B.R. MANNA	
2.	Bahula (UG)	N. KUMAR	

4.11.19  
Agent

(Bahula & Lower Kenda Mines)



EASTERN COAL FIELDS LIMITED  
A subsidiary of Coal India Limited.  
Office of the Agent  
Chora Haripur Group of Mines, Kenda Area.  
P.O:- Haripur. Dist: -,Burdwan.  
Pin:-713378. West Bengal

### UNDERTAKING

Information provided in Half yearly EC compliance report for the period April '19 to Sept'19 in respect of the following mines of Cluster no. 11 is true to the best of my knowledge:

SL NO.	MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1.	Krishnagar(UG)		
2.	Haripur group of Mines	Somenath Sarfar	
i)	Haripur (UG + OC)		
ii)	Chora 10 pit	Subimal Acharya	
iii)	Chora 7.9 pit	Abhijit Kurdu	

Agent

(Krishnanagar/Haripur(UG+OC)/Chora 7.9 pit/Chora 10 pit)



**EASTERN COAL FIELDS LIMITED**

A subsidiary of Coal India Limited.

Office of the Agent

CBI/Shankarpur OC Patch/Bonbahal OC, Kenda Area.

P.O:- Bahula, Dist:- Burdwan.

Pin:-713322. West Bengal

**UNDERTAKING**

Information provided in Half yearly EC compliance report for the period April '19 to Sept'19 in respect of the following mines of Cluster no. 11 is true to the best of my knowledge:

SL. NO.	MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1.	CBI(UG)		
2.	Bonbahal OC Patch(25 Ha)	Ratmesh Kumar Rai	
3.	Shankarpur/CL Jambad OC Patch/mine(52 Ha)		

Agent 8/11/19

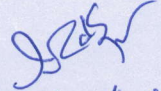
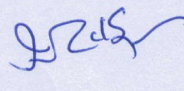
(CBI (UG)/ Bonbahal OC Patch/ Shankarpur OC Patch mines)



EASTERN COAL FIELDS LIMITED  
A subsidiary of Coal India Limited.  
Office of the Agent  
New Kenda Group of Mines, Kenda Area.  
P.O:- Kenda , Dist: - Burdwan.  
Pin:-713342. West Bengal

### UNDERTAKING

Information provided in half yearly EC compliance report for the period April'19 to Sept'19 in respect of the following mines of Cluster no. 11 is true to the best of my knowledge:

SL NO.	MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1.	New Kenda (UG)		
2.	W kenda OC Patch/mine(49 Ha)		
3.	New Kenda OC mine	I.N. Chatterjee	

Agent  
(New Kenda Group of Mines)

04/11/19

**EASTERN COALFIELDS LIMITED**  
**(A Subsidiary of Coal India Limited)**  
Office of the General Manager  
Bankola Area



P.O. Ukhra  
District : Paschim Burdwan  
West Bengal-713363  
Ph.: No. 0341-2665491/492/493/494  
Fax No. 0341-2665366  
Email: gmbankola@gmail.com

Ref. No.: *mc/AS/ENV/19/384*

Dated: *18/11/19*

**UNDERTAKING**

Information provided in Half yearly EC compliance report for the period of Apr'19- Sep'19 in respect of the Moira Colliery of Cluster No.10 is true to the best of my knowledge.

*[Signature]*  
*16-11-19*

Agent

Moira Colliery

*[Signature]*  
*16/11/19*

Manager

Moira Colliery

**EASTERN COALFIELDS LIMITED**

**(A Subsidiary of Coal India Limited)**

**Office of the General Manager  
Bankola Area**



**P.O. Ukhra**

**District : Paschim Burdwan  
West Bengal-713363**

**Ph.: No. 0341-2665491/492/493/494**

**Fax No. 0341-2665366**

**Email: gmbankola@gmail.com**

**Ref. No.:** *Asst/Ke/BHV/19/1333*

**Dated:** *18/11/19*

**UNDERTAKING**

Information provided in Half yearly EC compliance report for the period of Apr'19- Sep'19 in respect of the Khandra Colliery of Cluster No.11 is true to the best of my knowledge.

*[Signature]*  
*16-11-19*

**Agent**

**Khandra Colliery**

*[Signature]*  
*16/11/19*

**Manager**

**Khandra Colliery**

**EASTERN COALFIELDS LIMITED**  
**(A Subsidiary of Coal India Limited)**  
Office of the General Manager  
Bankola Area



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Fax No. 0341-2665366  
Email: gmbankola@gmail.com

Ref. No.: SKP/MGR/019/288

Dated: 19/10/2019

**UNDERTAKING**

Information provided in Half yearly EC compliance report for the period of Apr'19- Sep'19 in respect of the Shankarpur Colliery of Cluster No.11 is true to the best of my knowledge.

Shy 19/10/19

Agent

Shankarpur Colliery

B 18/10/19

Manager

Shankarpur Colliery

**EASTERN COALFIELDS LIMITED**  
**(A Subsidiary of Coal India Limited)**  
Office of the General Manager  
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West Bengal-713363  
Ph.: No. 0341-2665491/492/493/494  
Fax No. 0341-2665366  
Email: gmbankola@gmail.com


**Ref. No.:**

**Dated:**

**UNDERTAKING**

Information provided in Half yearly EC compliance report for the period of Apr'19- Sep'19 in respect of the Bankola Colliery of Cluster No.12 is true to the best of my knowledge.

  
Agent 20/11/19  
Bankola Colliery

  
Manager 20/11/19  
Bankola Colliery

**EASTERN COALFIELDS LIMITED**  
**(A Subsidiary of Coal India Limited)**  
Office of the General Manager  
Bankola Area



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West Bengal-713363  
Ph.: No. 0341-2665491/492/493/494  
Fax No. 0341-2665366  
Email: gmbankola@gmail.com

**Ref. No.:**

**Dated:**

**UNDERTAKING**

Information provided in Half yearly EC compliance report for the period of Apr'19- Sep'19 in respect of the Tilaboni Colliery of Cluster No.12 is true to the best of my knowledge.

  
Agent


Tilaboni Colliery

  
Manager

Tilaboni Colliery

Ref. No.:

Dated:

<p><b>EASTERN COALFIELDS LIMITED</b> (A Subsidiary of Coal India Limited) Office of the General Manager Bankola Area</p>		<p>P. O. Ukhra District : Paschim Burdwan West Bengal-713363 Ph.: No. 0341-2665491/492/493/494 Fax No. 0341-2665366 Email: gmbankola@gmail.com</p>
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**UNDERTAKING**

Information provided in Half yearly EC compliance report for the period of Apr'19-Sep'19 in respect of the Kumardih-A Colliery of Cluster No.12 is true to the best of my knowledge.

Kumardih, A' Colliery

Agent  
18.11.19

Kumardih, A' Colliery

Manager  
18.11.19

**EASTERN COALFIELDS LIMITED**  
**(A Subsidiary of Coal India Limited)**  
Office of the General Manager  
Bankola Area



P.O. Ukhra  
District : Paschim Burdwan  
West Bengal-713363  
Ph.: No. 0341-2665491/492/493/494  
Fax No. 0341-2665366  
Email: gmbankola@gmail.com

**Ref. No.:**

**Dated:**

**UNDERTAKING**

Information provided in Half yearly EC compliance report for the period of Apr'19- Sep'19 in respect of Nakrakonda-Kumardihi-B UG & OC of Cluster No.12 is true to the best of my knowledge.

Agent

2/11/19

Kumardihi 'B' Colliery

Manager

Kumardihi 'B' Colliery

**Half Yearly EC Compliance report in respect of mines**

**Area (Cluster 11), ECL**

**Period:- April 2019 to September 2019**

<b>Specific Conditions</b>			
<b>Condition no.(i)</b>	The Maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.		
<b>Compliance</b>	<b>Kenda - Complied</b>		
<b>S.No</b>	<b><u>Name of Mines</u></b>	<b><u>Peak EC Capacity</u></b> (MTPA)	<b><u>Production from(Oct '18 to March '19)</u></b> (MT)
1	Krishnanagar (U/G)	0.05	Temporarily closed.
2	Haripur Group of Mines	2.30	0.402584
A	Haripur(U/G + OC )	0.75	Haripur UG is Temporarily closed & OCP Not yet started.
B	CBI(U/G)	0.10	0.028962
C	Chora 7,9 & 10 pit(U/G)	0.15	0.074052
D	Bonbahal OC Patch(OCP)	0.5	0.0689
E	Shankarpur/CL Jambad OC Patch/Mine(52 Ha)	0.8	0.23067
3	New Kenda Group of Mines	2.00	0.110475
A	New Kenda (UG)	0.05	0.01436
B	West Kenda OC Patch/Mines	0.75	Not yet started.
C	New Kenda OC mine(240 Ha)	1.2	0.096115
4	Bahula Group of Mines	0.45	0.137411
A	Lower Kenda(U/G)	0.15	0.031972
B	Bahula (U/G)	0.25	0.076973
C	CL Jambad (U/G)	0.05	0.028466
5	Siduli(U/G +OC)	1.2	0.04194, OCP not yet started.
<b>Bankola – Complied</b>			

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

	Sl No.	Name of the Mine	Peak EC Capacity (MTY)	Production (MT)	
				Apr-Sep'19	FY 2019 to 2020
	1	Khandra U/G	0.39	0..037115	0..037115
	2	Shankarpur U/G	1.16	0.133481	0.133481
<b>Condition(ii)</b>	The validity of the EC is for the life of mine or as specified in the EIA Notification, 2006 whichever is earlier.				
<b>Compliance</b>	Agreed.				
<b>Condition(iii)</b>	The socio economic study conducted by PP needs to be authenticated by an institute of repute such as Indian institute of forest Management /XLRI, Jamshedpur.				
<b>Compliance</b>	<p><b>Kenda</b> - This condition contained in EC letter No. <b>J-11015/245/2011/-IA-II(M),dated 21<sup>st</sup> July 2015, with amendment dated 29<sup>th</sup> November 2016</b> of Cluster 11 has been deleted as per letter no. <b>J-11015/245/2011/-IA-II(M),Dated 10<sup>th</sup> Sept. 2018 issued by MoEF.</b></p> <p><b>Bankola</b> - Not applicable for Shankarpur UG and Khandra UG mines under Bankola Area.</p>				
<b>Condition (iv)</b>	All safety measures shall be taken as per CMR, 1957 & related circulars.				
<b>compliance</b>	<p><b>Kenda</b> - All safety measures are being taken as per CMR- 2017 &amp; related Circulars.</p> <p><b>Bankola</b> - All safety measures are being taken as per CMR- 2017 &amp; related Circulars.</p>				
<b>Condition(v)</b>	The production shall be within mining lease area.				
<b>Compliance</b>	The production is within the same Mining lease.				
<b>Condition(vi)</b>	The loading system from Continuous Miner to Mine Car needs to be improved to utilize the continuous miner efficiently.				
<b>Compliance</b>	<p><b>Kenda</b>- There is no continuous miner in the Kenda area of cluster No.11.</p> <p><b>Bankola</b>- Not applicable. There is no continuous miner in Khandra and Shankarpur Colliery under Bankola Area.</p>				
<b>Condition(vii)</b>	There shall be no external dump and mine voids at the end of mining. The land shall be brought back the surface level for agricultural use.				
<b>compliance</b>	<p><b>Kenda</b> - The backfilling is being done as per mine closure plan and after technical reclamation, biological reclamation is being done as per MCP.</p> <p><b>Bankola</b> - Not applicable since there is no OC in Cluster 11 under Bankola Area.</p>				
<b>Condition(viii)</b>	Controlled blasting in all the mines to be resorted to.				
<b>compliance</b>	Kenda- Complied				

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

	Bankola- Controlled blasting is practiced in all the mines under Bankola Area.
<b>Condition(ix)</b>	Till the OB dump is re-handled, it shall be covered with grass cover.
<b>compliance</b>	<b>Kenda</b> - Noted and Agreed. <b>Bankola</b> - Not applicable as there is no external OB dump due to underground mining.
<b>Condition(x)</b>	Suitable garland drains and settling tank be provided.
<b>compliance</b>	Garland drains have been provided wherever is required.
<b>Condition(xi)</b>	Socio-economic study to be carried out in order to establish the necessity of mining on New Kenda OC Patch. Presently, EC is recommended to the cluster without New Kenda OCP.
<b>compliance</b>	<b>Kenda</b> - This condition contained in EC letter No. <b>J-11015/245/2011/-IA-II(M),dated 21<sup>st</sup> July 2015, with amendment dated 29<sup>th</sup> November 2016</b> of Cluster 11 has been deleted as per letter no. <b>J-11015/245/2011/-IA-II(M),Dated 10<sup>th</sup> Sept. 2018 issued by MoEF.</b>  <b>Bankola</b> – Not applicable for Bankola area.
<b>Condition(xii)</b>	Coal transportation shall be: in pit underground mine-coal tubs at the faces are being hauled by Tugger Haulage; opencast mine-coal at surface is transported to the nearby coal depot by dumpers through tipplers, surface to siding by dumpers.
<b>compliance</b>	It is being complied. <b>Bankola</b> - Dumper with polythene cover is used for transportation of coal from UG faces to Siding .
<b>Condition(xiii)</b>	Independent network of railway sidings inside the cluster to be developed and should be constructed at the earliest till then proponent may use mechanically covered trucks for transportation of coal.
<b>compliance</b>	<b>Kenda</b> - Bahula railway siding is inside the cluster. Coal transportation to railway siding from coal depot is being done by tarpaulin covered truck.  <b>Bankola</b> - There are currently active 2 railways sidings (Bankola I and Bankola II) serving to the mines under Bankola Area. Transportation of coal from mine to railway siding is being done by tarpaulin covered trucks.
<b>Condition(xiv)</b>	Three tier green plants shall be raised around the railway sidings and along the road side to prevent dust and noise pollution.
<b>compliance</b>	<b>Kenda</b> - Noted and Agreed. Depending upon the availability of land, three tier plantations would be done. However, Plantation along Bahula railway sidings have been done. Total 3750 Nos of trees(1.5 Ha Land) have been planted along Bahula Railway sidings  <b>Bankola</b> - Both sides of connecting roadway are well vegetated naturally. Plantation along 5.5km roadways has been done along coal transportation road and siding. The species planted are as follows- <ul style="list-style-type: none"> <li>• Tagar nana</li> <li>• Duranta goldiana</li> <li>• Ixora nana</li> <li>• Hibiscus</li> <li>• Mosanda</li> </ul>

**Half Yearly EC Compliance report in respect of mines**

**Area (Cluster 11), ECL**

**Period:- April 2019 to September 2019**

	<ul style="list-style-type: none"> <li>• Almunda</li> <li>• Phutus</li> <li>• Palm</li> <li>• Spathodia</li> <li>• Lagerstroema</li> <li>• Cassia delonix</li> <li>• Ashok</li> <li>• Polyalthia</li> <li>• Callistemon</li> </ul>
<b>Condition(xv)</b>	Stowing and depillaring shall be as per the recommendations of the DGMS.
<b>compliance</b>	Stowing and depillaring is being done as per recommendations of the DGMS.
<b>Condition(xvi)</b>	The proponent must comply with the Raniganj Action Plan .The unstable area within the cluster will be brought under the plantation after the population residing over these areas is rehabilitated under the Master Plan for Raniganj Coalfields to be implemented by ADDA.
<b>compliance</b>	Job is being implemented by ADDA.
<b>Condition(xvii)</b>	Trees with deep rooted system should be planted so as to prevent soil erosion.
<b>compliance</b>	<p><b>Kenda</b> - Noted and Agreed.</p> <p><b>Bankola</b> - Deep rooted tree species planted are as follows- Neem, Seemul, Karanch, Shisham, Arjun, Babool &amp; Sirish.</p>
<b>Condition(xviii)</b>	Proponent should plant additional 10 Ha/year over the next 10 years at various locations in the cluster.
<b>compliance</b>	<p><b>Kenda</b> - In 2015-16, 10 Ha plantation ,In 2016-17, 16 Ha of plantation ,2018-19, 3 Ha &amp; In FY 2019-20, 9 Ha of plantation with density 2500 species /Ha have been planted in Kenda Area under cluster 11. The details of plantation is as follows:-</p> <ol style="list-style-type: none"> <li>1. OB Dump Area-----14 Ha (10 Ha in FY 2015-16 &amp; 4 Ha in FY 2016-17).</li> <li>2. Backfilled Area-----3 Ha( in FY 2016-17).</li> <li>3. Others-----9 Ha ( in FY 2016-17).</li> <li>4. Backfilled Area-----3 Ha (in FY 2018-19).</li> <li>5. Internal OB Dump Area-----7.5 Ha (in FY 2019-20)</li> </ol> <p>Along Railway sidings---1.5 Ha(in FY 2019-20)</p> <p><b>Bankola</b>- 12 ha plantaion and 5.5 km roadside plantation has been completed in Bankola Area in 2016-17. 3 Ha orchard plantations is being done at Bankola colony for orchard plantation.</p>
<b>Condition(xix)</b>	Rivers/nallahs shall be desilted and restored back to functional state.
<b>Compliance</b>	<p><b>Kenda</b>- There is no siltation from the mine into Rivers/Nallahs. However cleaning of nallahs is an annual pre monsoon activity in each mine of the cluster.</p> <p><b>Bankola</b>- At present 2 nos. UG mines are working under Bankola Area in Cluster-11.No activity is carried out in the UG mines which may cause siltation in any river/nallah in vicinity. However, river/nallah shall be desilted and restored back to functional state when required.</p>

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

<b>Condition(xx)</b>	Wildlife conservation plan be prepared and submitted to MOEFCC with the approval of the state Govt.																		
<b>compliance</b>	Conservator of Forest (Wildlife), Govt. of West Bengal has been requested to prepared Wildlife Conservation plan of entire Raniganj Coalfield and sent it for approval.																		
<b>Condition(xxi)</b>	Proponent shall use high resolution image of all clusters for evaluating land use, plantation etc.																		
<b>compliance</b>	Land use pattern and plantation is being monitored by satellite surveillance based on satellite imagery.																		
<b>Condition(xxii)</b>	Separate drainage pattern be provided with the approval of competent authority.																		
<b>compliance</b>	Noted and Agreed. Separate drainage pattern be provided wherever required.																		
<b>Condition(xxiii)</b>	Sand stowing must be used as recommended by CMPDI.																		
<b>compliance</b>	Sand stowing is being used as recommended by CMPDIL.																		
<b>Condition(xxiv)</b>	Action plan for prevention and mitigation of subsidence be prepared and implemented.																		
<b>compliance</b>	<p><b>Kenda-</b> Agreed.</p> <p><b>Bankola</b> - No underground mining is carried out below within 45m of the Major Roads, Railway line and nallah flowing through the cluster. Coal pillars are left intact vertically below and within the angle of draw of villages and other surface features. Depillaring is done with sand stowing in Khandra UG. The mining method adopted in consultation with DGMS and their approval.</p>																		
<b>Condition(xxv)</b>	The OC Patch to be operated will be completely filled-up after exhaustion of reserves and reclaimed with plantation.																		
<b>Compliance</b>	<p><b>Kenda-</b> The OC Patch to be operated is being filled up as per approved mine closure plan and at the end of technical reclamation, Biological reclamation will be done as per Approved mine closure plan. The following details is given below:-</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">S. No.</th> <th style="width: 30%;">Name of the Mines</th> <th style="width: 20%;">Achievement for backfilling mined out de-coaled from 01.04.2018 to 31.3.2019 in Ha.</th> <th style="width: 35%;">Achievement for biological reclamation from 01.04.2018 to 31.3.2019 in Ha.</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>New Kenda OCP</td> <td>Nil</td> <td>Nil</td> </tr> <tr> <td>2.</td> <td>Shankarpur/C L Jambad/ OC Patch/Mine</td> <td>1.83 Ha</td> <td>6 Ha</td> </tr> <tr> <td>3.</td> <td>Bonbahal OCP</td> <td>0.4 Ha</td> <td>1.5 Ha</td> </tr> </tbody> </table> <p><b>Bankola</b> - Not applicable since there is no OC in Cluster 11 under Bankola Area.</p>			S. No.	Name of the Mines	Achievement for backfilling mined out de-coaled from 01.04.2018 to 31.3.2019 in Ha.	Achievement for biological reclamation from 01.04.2018 to 31.3.2019 in Ha.	1.	New Kenda OCP	Nil	Nil	2.	Shankarpur/C L Jambad/ OC Patch/Mine	1.83 Ha	6 Ha	3.	Bonbahal OCP	0.4 Ha	1.5 Ha
S. No.	Name of the Mines	Achievement for backfilling mined out de-coaled from 01.04.2018 to 31.3.2019 in Ha.	Achievement for biological reclamation from 01.04.2018 to 31.3.2019 in Ha.																
1.	New Kenda OCP	Nil	Nil																
2.	Shankarpur/C L Jambad/ OC Patch/Mine	1.83 Ha	6 Ha																
3.	Bonbahal OCP	0.4 Ha	1.5 Ha																
<b>Condition(xxvi)</b>	After completion of mining activities, the subsided areas shall be graded and planted upon.																		

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

<b>compliance</b>	Noted and Agreed.																								
<b>Condition(xxvii)</b>	Coal Extraction shall also be optimized in areas where agricultural is continuing. Some pillars shall be left below the agricultural land. No depillaring & coal extraction should be carried out below habitation, H.T lines & beneath road, water bodies.																								
<b>compliance</b>	Coal Extraction is being carried out as per DGMS permissions and guidelines.																								
<b>Condition(xxviii)</b>	Water discharged from the mine should be as good as surface drinking water.																								
<b>compliance</b>	<p><b>Kenda</b> - The Mine water is fortnightly tested for parameters namely pH, TSS, TDS, Oil and Grease and COD and conforms to MoEF Schedule-VI standards. At Present, in Kenda area, Water treatment plant ( having pressure filter and chlorination unit) at Bahula Colliery, Siduli colliery, New Kenda Colliery, Lower Kenda , C L Jambad, Chora 7,9 Pit have been installed. One R.O plant had been installed at Kenda Area Complex. under CSR, One water treatment filter plant had been installed at New Kenda Colony.</p> <p><b>Bankola</b> - Mine discharge water is being treated in</p> <p>i) <b>Pressure filter</b> – 1 unit each at Kumardihi ‘B’, Bankola, Shankarpur, Kumardihi ‘A’, and Tilaboni colliery. 2 units at SSP colliery.</p> <p>ii) <b>Slow Sand Filter</b> – 1 unit each at Moira Colliery and Area Complex. 2 units each at Khandra colliery and SSP colliery.</p> <p>iii) <b>Rapid Gravity Filter</b> – 1 unit at Bankola Colliery.</p> <p>iv) <b>Reverse Osmosis Plant</b> – 1 unit at Bankola Colliery.</p> <p>The water is fortnightly tested for parameters namely pH, TSS, TDS, Oil &amp; Grease and COD and conforms to the MoEF Schedule-VI Standards. The water is then used for domestic and mining uses.</p>																								
<b>Condition(xxix)</b>	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, surroundings, shall be continued till movement ceases completely. In case of observation of high rate of subsidence movement, appropriate effective corrective measure shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with blast and clayey soil/suitable material.																								
<b>compliance</b>	<p><b>Kenda</b>- Regular inspection is being done by the pit safety committee headed by Safety Officer on the surface over and around the working area for any sign of subsidence. The subsidence details is given below:-</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">S.No.</th> <th style="width: 15%;">FY</th> <th style="width: 25%;">Name of the Colliery</th> <th style="width: 15%;">No. of instances of threat of subsidence noticed</th> <th style="width: 35%;">Action taken by the Management</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>FY 2019-20 till Sept 2019</td> <td>CBI (UG &amp; OCP)/Shankarpur OCP</td> <td>Nil</td> <td>NA</td> </tr> <tr> <td>2.</td> <td>FY 2019-20 till Sept 2019</td> <td>New Kenda group of Mines (UG &amp; OCP)</td> <td>Nil</td> <td>NA</td> </tr> <tr> <td>3.</td> <td>FY 2019-20</td> <td>Bonbahal</td> <td>Nil</td> <td>NA</td> </tr> </tbody> </table>					S.No.	FY	Name of the Colliery	No. of instances of threat of subsidence noticed	Action taken by the Management	1.	FY 2019-20 till Sept 2019	CBI (UG & OCP)/Shankarpur OCP	Nil	NA	2.	FY 2019-20 till Sept 2019	New Kenda group of Mines (UG & OCP)	Nil	NA	3.	FY 2019-20	Bonbahal	Nil	NA
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1.	FY 2019-20 till Sept 2019	CBI (UG & OCP)/Shankarpur OCP	Nil	NA																					
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**Half Yearly EC Compliance report in respect of mines**

**Area (Cluster 11), ECL**

**Period:- April 2019 to September 2019**

	till Sept 2019	OCP																						
	<p><b>Bankola-</b> Regular inspection is being carried out by the pit safety committee headed by Safety Officer on the surface over and around the working area for any sign of subsidence. It is pertinent to point out that underground mining is being carried out in conjunction with hydraulic sand stowing as per DGMS stipulations. Crack filling is also carried out wherever required.</p>																							
<b>Condition(xxx)</b>	If subsidence is found exceeding the permitted limits, then the landowner shall be adequately compensated with mutual agreement of the landowners.																							
<b>compliance</b>	Surface land is already acquired under CBA Act and Compensation as per Company's R&R Policy is given to the land owners prior to subsidence.																							
<b>Condition(xxxi.)</b>	Water sprinkler system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points etc. Major approach roads shall be black topped and properly maintained.																							
<b>compliance</b>	<p><b>Kenda-</b> The coal transportation roads from colliery to Railway Siding are black topped and Water Sprinkling is being done on the approach road with Mobile Water tankers. 21 Nos. of fixed type sprinkler has been installed along Bahula railway sidings under Kenda Area (ECL). Also, water spraying arrangement have been provided at each coal depot.</p> <p><b>Bankola-</b> the coal transportation road from colliery to railway siding has been black topped in order to prevent fugitive dust emission. Water sprinkling is being done on the approach road with Mobile water tankers. Regular sprinkling of water is carried out over the surface through fixed and mobile sprinklers to check fugitive emission at railway siding, Fixed water sprinklers are installed at Bankola I and Bankola II Railway siding under Bankola area.</p>																							
<b>Condition(xxxii)</b>	The CSR cost should be Rs 5 per tonnes of coal produced which should be adjusted as per the annual inflation.																							
<b>compliance</b>	<p>As per the revised CSR policy of CIL, 2% of the avg. net profit of preceding three years is the norm for CSR activities in the entire ECL command area. The following CSR activity which is in progress in Kenda Area (ECL) is mentioned below:-</p> <table border="1"> <thead> <tr> <th>S.No.</th> <th>Name of the Activity</th> <th>Project Cost/Work order Value(In Rs.)</th> <th>Status(Ongoing/ Completed)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Installation of Solar LED Lights in Chora and Kenda GP.</td> <td>₹ 1,12,00,000.00</td> <td>Approved. Under Tendering Process.</td> </tr> <tr> <td>2.</td> <td>Dignity and Care for Women and Girls through Social enterprise of hygiene products .</td> <td>₹ 14,53,277.00</td> <td>It is under process for competent approval.</td> </tr> <tr> <td>3.</td> <td>A pilot Project on STEM in Kenda Area.</td> <td>₹ 10,63,000.00</td> <td>It is under process for competent approval.</td> </tr> <tr> <td>4.</td> <td>Supplying of</td> <td>₹ 5,80,514.00</td> <td>It is under</td> </tr> </tbody> </table>				S.No.	Name of the Activity	Project Cost/Work order Value(In Rs.)	Status(Ongoing/ Completed)	1.	Installation of Solar LED Lights in Chora and Kenda GP.	₹ 1,12,00,000.00	Approved. Under Tendering Process.	2.	Dignity and Care for Women and Girls through Social enterprise of hygiene products .	₹ 14,53,277.00	It is under process for competent approval.	3.	A pilot Project on STEM in Kenda Area.	₹ 10,63,000.00	It is under process for competent approval.	4.	Supplying of	₹ 5,80,514.00	It is under
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		Water through Tankers at Four locations under Bahula Gram Panchayet, Kenda Area .		process for competent approval.
	5.	Renovation of Bahula Free Primary School and Installation of Water Purifier-cum-Cooler , Bahula under ECL-CSR Kenda Area.	₹ 13,23,000.00	It is under process for competent approval.
	6.	Water Supply Through Tankers at Five Locations in New Kenda Gram panchayat.	₹ 14,15,540.00	Approved. Work will start tentatively from January.
	<p><b>Bankola-</b> As per the revised CSR policy of CIL 2% of the average profit of preceding 3 years is the norms for CSR expenditure in the entire ECL command areas.</p>			
<b>Condition(xxxiii)</b>	The mining in the existing mines should be phased out after expiry of the current mining lease and after reclamation of the mines over area. The operating mine may be analyzed and monitored for compliance of conditions, bearing with movement of wildlife and until such time they are closed /phased out.			
<b>compliance</b>	Noted and Agreed, shall be complied as per Progressive and Final Mine Closure plan (MCP).			
<b>Condition(xxxiv)</b>	Everybody in the core area should be provided with mask for protection against fugitive dust emissions.			
<b>compliance</b>	In order to provide protection against fugitive dust emission, dust masks are being provided to people working in the core area.			
<b>Condition(xxxv)</b>	Dust mask to be provided to everyone working in the mining area.			
<b>compliance</b>	Dust mask have been provided to everyone working in the mining area.			
<b>Condition(xxxvi)</b>	The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area.			
<b>compliance</b>	Supervisory staff ensures compulsory wearing of the dust masks in the core area.			
<b>Condition(xxxvii)</b>	People working in the core area should be periodically tested for the lung diseases and the burden of cost on account of working in the coal mine area.			
<b>compliance</b>	20 % of the work force is covered under periodic medical examination each year including lung diseases the cost of which is borne by the company. Total no. of person which has gone through PME in the FY 2019-20 till Sept'2019 is given below:-			

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Name of the Area	Month	PME achievement for the Month (Nos. of Person)	
		ECL Employees	Contractual workers
Kenda Area	April'2019	96	16
	May'2019	81	17
	June'2019	93	4
	July'2019	117	8
	August'2019	84	7
	September'2019	69	1
	<b>Total</b>		<b>540</b>

**Bankola** - 20% of the work force is covered under periodic medical examination each year including lung diseases the cost of which is borne by the company. Periodic Medical Examination (PME) of 828 employees has been done within Apr'18-Sep'19 in FY 2019-20.

<b>Condition(xxxviii)</b>	The mining area should be surrounded by green belt having thick closed thick canopy of the tree cover.												
<b>compliance</b>	<p><b>Kenda-</b> Noted and Agreed.</p> <p><b>Bankola-</b> UG mines cause very low pollution load which is concentrated in mine working faces and transfer points. The collieries are surrounded by densely populated village and private agricultural lands. Natural vegetation exist around mines. Plantation is being carried out wherever land is available. However, at Bankola Area, 12 ha plantation along with 5.5 km roadside plantation and 5 Ha orchard plantation is created on 2016-17.</p>												
<b>Condition(xxxix)</b>	Besides carrying out periodic health check up of their worker, 10 % of the worker identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialized agency /institution within the District/State and the results reported to this ministry and to DGMS.												
<b>compliance</b>	<p><b>Kenda-</b> Noted and agreed.</p> <p>PME is being carried out for all employees once in every 5 years (@ 20% employees/year). Special cases diagnosed during such PME are monitored at shorter intervals as directed by the PME Board of Doctors. All serious diseases and impairments are reported to DGMS at regular intervals. Total no. of person which has gone through PME in the FY 2019-20 from Apr2019 to Sept 2019 is given below:-</p> <table border="1"> <thead> <tr> <th>Name of the Area</th> <th>Month</th> <th colspan="2">PME achievement for the Month (Nos. of Person)</th> </tr> <tr> <th>Kenda Area</th> <th></th> <th>ECL Employees</th> <th>Contractual workers</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name of the Area	Month	PME achievement for the Month (Nos. of Person)		Kenda Area		ECL Employees	Contractual workers				
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## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

		<b>April'2019</b>	<b>96</b>	<b>16</b>
		<b>May'2019</b>	<b>81</b>	<b>17</b>
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		<b>July'2019</b>	<b>117</b>	<b>8</b>
		<b>August'2019</b>	<b>84</b>	<b>7</b>
		<b>September'2019</b>	<b>69</b>	<b>1</b>
		<b>Total</b>	<b>540</b>	<b>53</b>
	<p><b>Bankola-</b> We are carrying out Periodical Medical Examination (PME) for all employees once in every 5 years (@ 20% employees/year). This PME is mandatory for all employees. Special cases diagnosed during such PMEs are monitored at shorter intervals as directed by the PME Board of Doctors. All serious diseases and impairments are reported to DGMS at regular intervals. The details are enclosed herewith.</p>			
<b>Condition(xl)</b>	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.			
<b>compliance</b>	<p><b>Kenda-</b> Not applicable as there is no river within the mine leased area of the colliery.</p> <p><b>Bankola-</b> Not applicable as there is no river within the mine lease area of the collieries under Bankola Area in cluster 11.</p>			
<b>Condition(xli)</b>	There shall be no overflow of OB into the river and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project.			
<b>compliance</b>	<p><b>Kenda-</b> There is no river in the vicinity of the cluster.11</p> <p><b>Bankola-</b> Not applicable for UG mines and as there is no river in the vicinity of the cluster11. However, plantation shall be carried out at suitable places where land is available.</p>			
<b>Condition(xlii)</b>	Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly. Garland drains (size, gradient, length) and sump capacity shall be designed keeping 50 % safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.			
<b>Compliance</b>	<p><b>Kenda-</b> Catch drains and siltation ponds have been provided at the toe of the dumps wherever required.</p> <p><b>Bankola -</b> Permanent masonry drains of size range 200 to 600 m, 0.90 m to 2 m and 0.6 m to 2 m depth and 1 in 30 gradients, depending on the catchment have been constructed for evacuation of rain water. The size of the drain is large enough to take care of heavy downpours. The drain is cleared of debris before</p>			

## Half Yearly EC Compliance report in respect of mines

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	start of the monsoon season as part of our annual monsoon preparation program.
<b>Condition(xliii)</b>	Garland drains (size, gradient, and length) around the safety areas such as mine shaft and low lying areas and sump capacity shall be designed keeping 50 % safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.
<b>compliance</b>	<b>Kenda-</b> Noted and Agreed. <b>Bankola -</b> Garland drain is present at Sarpi sub-station, Sarpi pumping station, ESP pit, transformer room, incline mouth and CHP. Total length of garland length is about 5 km. Width of garland drains are usually kept at 0.90 m while depth of the drain varies from 0.6 m to 1.5 m depending on the catchment and gradient of the drain.  Garland drain wherever required are maintained and required sump capacity is also maintained in the mine.
<b>Condition(xliv)</b>	Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check runoff and siltation shall be based on the rainfall data.
<b>compliance</b>	<b>Kenda-</b> To check runoff and siltation, proper benching in dump is being done while maintaining slope stability. Regular Plantation on OB dumps is being done to stabilize the dumps. <b>Bankola-</b> Not applicable as there are no OC mines under Bankola Area within the cluster.
<b>Condition(xlv)</b>	Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkler system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points etc.
<b>compliance</b>	<b>Kenda -</b> The crusher at Bahula siding inside the cluster is equipped with water sprinkler to arrest fugitive emissions from crushing operations. Apart from tha, fixed type sprinkler has been installed along bahula railway sidings under Kenda Area (ECL). <b>Bankola-</b> Not applicable as there are no CHP under Bankola Area within the cluster 11
<b>Condition(xlvi)</b>	Mine discharge water outside the ML shall be monitored, particularly for TDS, and treated to conform to prescribed levels before discharge into natural environment.
<b>compliance</b>	Complied. <b>Kenda-</b> Mine water discharge quality complies with prescribed standards. Regular monitoring is done by CMPDIL. The quality of mine water is within permissible limits. Mine water quality report are enclosed. <b>Bankola-</b> Mine water discharge quality complies with prescribed standards.

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

	Regular monitoring is done by CMPDIL. The quality of mine water is within permissible limits.  Reports are enclosed																								
<b>Condition(xlvii)</b>	Drills shall be wet operated.																								
<b>compliance</b>	<b>Kenda-</b> Noted and Agreed.  <b>Bankola-</b> Water spraying is done for dust suppression before drilling in. underground and OC mines																								
<b>Condition(xlviii)</b>	The project authority shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green plants comprising of a mix of native species shall be developed all along the major approach roads.																								
<b>compliance</b>	<p><b>Kenda-</b> As per requirement, Regular repairing and tarring of roads are being taken on priority basis.</p> <p><b>Bankola-</b> As per requirement, Regular repairing and tarring of roads are being taken on priority basis. Both sides of approach roadway are well vegetated naturally. Plantation Done:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Year</th> <th>Name of Species</th> <th>Area in Ha</th> <th>No. of saplings</th> <th>Density</th> <th>Survival rate</th> </tr> </thead> <tbody> <tr> <td>2016-17</td> <td>Kamini, Rangan, Krishnachura, Jaba, Karabi, Bougenvelia, Pathodia, Jamun, Radhachura etc.</td> <td>5.5 Km (Road side)</td> <td>-</td> <td>-</td> <td>35%</td> </tr> <tr> <td>2016-17</td> <td>Chatim, Krishnachura, Radhachura, Karanch, Aamla etc.</td> <td>12 Ha</td> <td>22500</td> <td>2500/Ha</td> <td>75%</td> </tr> <tr> <td>2014-15</td> <td>Chatim, Krishnachura, Radhachura, Karanch, Aamla etc.</td> <td>3 Ha</td> <td>1200</td> <td>400/Ha</td> <td>95%</td> </tr> </tbody> </table>	Year	Name of Species	Area in Ha	No. of saplings	Density	Survival rate	2016-17	Kamini, Rangan, Krishnachura, Jaba, Karabi, Bougenvelia, Pathodia, Jamun, Radhachura etc.	5.5 Km (Road side)	-	-	35%	2016-17	Chatim, Krishnachura, Radhachura, Karanch, Aamla etc.	12 Ha	22500	2500/Ha	75%	2014-15	Chatim, Krishnachura, Radhachura, Karanch, Aamla etc.	3 Ha	1200	400/Ha	95%
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<b>Condition(xlix)</b>	Controlled blasting shall be practiced with use of delay detonators and only during day time. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.																								
<b>compliance</b>	Complied.																								

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	Controlled blasting is being done as per DGMS permission and conditions.																									
<b>Condition(i.)</b>	A progressive afforestation plan shall be implemented covering an area of 845.59 ha at the end of mining, which includes reclaimed eternal OB dump area (142.34 Ha );internal OB dump area(408 ha);green belt(295.25 ha) in township located outside the lease by planting native species in consultation with the local DFO/Agricultural Department .the density of the trees shall be around 2500 plants per Ha .Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.																									
<b>compliance</b>	<p><b>Kenda-</b> In FY 2015-16 , 2016-17, &amp; 2018-19,Total 29 Ha plantation have been done through Forest department, Durgapur &amp; Waste Bengal Waste land Development Corporation Ltd. under the supervision of DFO, Durgapur. Density of the trees is maintained at 2500 Plants per Ha. Details of plantation done at Different location inside the cluster under Kenda Area, ECL is given below:-</p> <table border="1"><thead><tr><th>Year</th><th>Name of Species</th><th>Area in Ha</th><th>No. of Saplings</th><th>Density</th></tr></thead><tbody><tr><td>2015-16</td><td>Kadam,Pe pal,Sonajuri,Jamun, Amla etc.</td><td>10 Ha</td><td>25000</td><td>2500/ha</td></tr><tr><td>2016-17</td><td>Neem,Kar anj,Sisoo, Chatim etc.</td><td>16 Ha</td><td>40000</td><td>2500/ha</td></tr><tr><td>2018-19</td><td>Neem,Kar anj,Sisoo, Chatim etc.</td><td>3 Ha</td><td>7500</td><td>2500/ha</td></tr><tr><td>2019-20</td><td>Chatim, Karanj, Palash, Jarul etc</td><td>9 Ha</td><td>22,500</td><td>2500/Ha</td></tr></tbody></table> <p><b>Bankola-</b> It is proposed to plant 10 Ha per year within the cluster at the density of 2500 plants/Ha.</p>	Year	Name of Species	Area in Ha	No. of Saplings	Density	2015-16	Kadam,Pe pal,Sonajuri,Jamun, Amla etc.	10 Ha	25000	2500/ha	2016-17	Neem,Kar anj,Sisoo, Chatim etc.	16 Ha	40000	2500/ha	2018-19	Neem,Kar anj,Sisoo, Chatim etc.	3 Ha	7500	2500/ha	2019-20	Chatim, Karanj, Palash, Jarul etc	9 Ha	22,500	2500/Ha
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<b>Condition(ii)</b>	The proponent should prepare restoration and reclamation plan for the degraded area. The land to be used in a productive and sustainable manner.																									
<b>compliance</b>	Mine closure Plan has already been prepared for the purpose. Restoration and reclamation shall be done accordingly.																									

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Period:- April 2019 to September 2019

<b>Condition (lii.)</b>	Compensatory Ecological and restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out.																			
<b>compliance</b>	<p><b>Kenda-</b> Mine closure Plan has already been prepared for the purpose. Compensatory ecological and restoration of wasteland shall be done accordingly. The details of plantation at different location in Kenda Area inside the cluster is given below:-</p> <ol style="list-style-type: none"> <li>1. OB Dump Area-----14 Ha (10 Ha in FY 2015-16 &amp; 4 Ha in FY 2016-17).</li> <li>2. Backfilled Area-----3 Ha( in FY 2016-17).</li> <li>3. Others-----9 Ha ( in FY 2016-17).</li> <li>4. Backfilled Area----3 Ha (in FY 2018-19).</li> <li>5. Internal OB Dump Area-----7.5 Ha(In FY 2019-20).</li> </ol> <p><b>Bankola-</b> Mine closure Plan has already been prepared for the purpose. Compensatory ecological and restoration of wasteland shall be done accordingly.</p>																			
<b>Condition(iiii)</b>	No ground water shall be used for mining operations.																			
<b>compliance</b>	No ground water is being used for mining operations.																			
<b>Condition(liv)</b>	An estimated total 258.26Mm <sup>3</sup> of OB will be generated during the entire life of the mine. OB will be dumped in four internal dumps covering an area of 408 Ha of land. The OB dump height is up to 60m.the minimum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump site shall continue till the vegetation becomes self-sustaining and compliance status submitted to MOEF & CC and its regional office on yearly basis.																			
<b>compliance</b>	<p><b>Kenda-</b> Agreed.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">S.No.</th> <th style="width: 30%;">Name of the Mines</th> <th style="width: 20%;">Quantity of OB Generated(in Lakh cum) in FY 2019-20 till Sept 2019.</th> <th style="width: 35%;">Quantity of OB Backfilled (in Lakh cum) in FY 2019-20 till Sept 2019.</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Shankarpur/C L Jambad OC Patch/mine</td> <td>10.083712</td> <td>5.24400</td> </tr> <tr> <td>2.</td> <td>Bonbahal OC Patch</td> <td>1.24</td> <td>1.24</td> </tr> <tr> <td>3.</td> <td>New Kenda OCP</td> <td>0.5699</td> <td>Nil</td> </tr> </tbody> </table> <p><b>Bankola-</b> Not applicable as there is no OC in Bankola area.</p>				S.No.	Name of the Mines	Quantity of OB Generated(in Lakh cum) in FY 2019-20 till Sept 2019.	Quantity of OB Backfilled (in Lakh cum) in FY 2019-20 till Sept 2019.	1.	Shankarpur/C L Jambad OC Patch/mine	10.083712	5.24400	2.	Bonbahal OC Patch	1.24	1.24	3.	New Kenda OCP	0.5699	Nil
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<b>Condition(lv.)</b>	Of the total quarry area 408 Ha the backfilled quarry area of (408 Ha) shall be reclaimed with plantation by planting native plant species in consultation with the local DFO /Agricultural department The density of the trees shall be around																			

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

	2500 Plants per Ha.																									
<b>compliance</b>	<p>Agreed. In FY 2015-16, 2016-17 &amp; 2018-19, Total 29 Ha plantation has been done at different location in kenda area with the help of Forest Department. The details of Plantation is given below:-</p> <table border="1"><thead><tr><th>Year</th><th>Name of Species</th><th>Area in Ha</th><th>No. of Saplings</th><th>Density</th></tr></thead><tbody><tr><td>2015-16</td><td>Kadam,Pe pal,Sonajuri,Jamun, Amla etc.</td><td>10 Ha</td><td>25000</td><td>2500/ha</td></tr><tr><td>2016-17</td><td>Neem,Kar anj,Sisoo, Chatim etc.</td><td>16 Ha</td><td>40000</td><td>2500/ha</td></tr><tr><td>2018-19</td><td>Neem,Kar anj,Sisoo, Chatim etc.</td><td>3 Ha</td><td>7500</td><td>2500/ha</td></tr><tr><td>2019-20</td><td>Chatim,Ka ranj, Palash, Jarul etc.</td><td>9 Ha</td><td>22500</td><td>2500/ha</td></tr></tbody></table>	Year	Name of Species	Area in Ha	No. of Saplings	Density	2015-16	Kadam,Pe pal,Sonajuri,Jamun, Amla etc.	10 Ha	25000	2500/ha	2016-17	Neem,Kar anj,Sisoo, Chatim etc.	16 Ha	40000	2500/ha	2018-19	Neem,Kar anj,Sisoo, Chatim etc.	3 Ha	7500	2500/ha	2019-20	Chatim,Ka ranj, Palash, Jarul etc.	9 Ha	22500	2500/ha
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<b>Condition(lvi.)</b>	<p>Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers.the monitoring for quality shall be done four times a year in pre-monsoon(May),Monsoon(August),post monsoon(November) and winter(January) seasons and for quality in May. Data thus collected shall be submitted to Ministry of Environment, Forests and climate change and to central pollution control board quarterly within one month of monitoring.</p>																									
<b>compliance</b>	<p><b>Kenda-</b> One piezometer at New Kenda Colliery have been installed. Piezometer Water Table Monitoring report is enclosed herewith (<b>As per Annexure-A</b>) &amp; ground water quality report are enclosed herewith.(<b>As per Annexure –A</b>).</p> <p><b>Bankola-</b> Ground water level monitoring is done through a network of existing wells and construction of new piezometer is under process.</p>																									
<b>Condition(lvii)</b>	<p>The company shall put up artificial groundwater recharge measures for augmentation of ground water resource in case monitoring indicates a decline in water table. The project authority shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.</p>																									
<b>compliance</b>	<p><b>Kenda-</b> Work has almost been completed for rainwater harvesting structure at Regional Hospital Chora and Kenda Area Office . The mine discharge is effectively being utilized to meet the domestic demands of the</p>																									

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

	<p>community thus reducing the strain on ground water resources.</p> <p><b>Bankola-</b> In underground mines, recharging of water at surface will further add to the quantum of water percolating into the underground workings. Also, no declining trend has been noticed in the mine leasehold.</p> <p>Mine discharged water is supplied by tanker or pipeline to Ukhra village, Shankarpur Village, Kumardihi village, Lal Bangla, Shyamsundarpur village and other locations.</p>
<b>Condition(Iviii)</b>	Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP waste water.
<b>compliance</b>	<p><b>Kenda-</b> Work order has been awarded to install the washing platform along with ETP at Shankarpur OCP and its work is in progress. For STP( Sewage Treatment Plant), Work order has been awarded for construction of STP at New Kenda Colony and its work is in progress.</p> <p><b>Bankola-</b> Quantity of effluent generated from mining activities (viz. workshops) are very less, about 10 lit/day for which ETP is not required. Most of the sewage generated from residential colony goes to Septic Tank. Feasibility study for STP by IIT-ISM is under Process.</p>
<b>Condition(Iviv)</b>	Land oustees shall be compensated as per the norms laid out R & R policy of CIL or the National R& R policy or R & R policy of the state government whichever is higher.
<b>compliance</b>	If required, Land oustees shall be compensated as per the norms laid out in R & R Policy of CIL.
<b>Condition(Ivv)</b>	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 the end of mine life shall be prepared once in 3 years (for any one particular season which is consistent with time series),and the report submitted to MOEF&CC and its concerned regional office.
<b>compliance</b>	Land use pattern and plantation is being monitored by satellite surveillance based on satellite imagery.
<b>Condition(Ivvi)</b>	A detailed final mine closure plan along with details of corpus fund shall be submitted to the Ministry of Environment, Forest & Climate Change within 6 months of grant of EC.
<b>compliance</b>	Mine closure plan have been prepared for the mine as per the guidelines of MOC.
<b>Condition(Ivvii)</b>	The project authority shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance of the mine.

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

<b>compliance</b>	As per the revised CSR policy of CIL, 2% of the avg. net profit of preceding three years is the norm for CSR activities in the entire ECL command area. The following CSR activity which is in progress in Kenda Area (ECL) is mentioned below:- The list of completed and under process CSR projects of Kenda Area for the F.Y 2018-19 is given below:-			
	S.No.	Name of the Activity	Project Cost/Work order Value(In Rs.)	Status(Ongoing/ Completed)
	1.	Installation of Solar LED Lights in Chora and Kenda GP.	₹ 1,12,00,000.00	Approved. Under Tendering Process.
	2.	Dignity and Care for Women and Girls through Social enterprise of hygiene products .	₹ 14,53,277.00	It is under process for competent approval.
	3.	A pilot Project on STEM in Kenda Area.	₹ 10,63,000.00	It is under process for competent approval.
	4.	Supplying of Water through Tankers at Four locations under Bahula Gram Panchayet, Kenda Area .	₹ 5,80,514.00	It is under process for competent approval.
	5.	Renovation of Bahula Free Primary School and Installation of Water Purifier-cum-Cooler , Bahula under ECL-CSR Kenda Area.	₹ 13,23,000.00	It is under process for competent approval.
	6.	Water Supply Through Tankers at Five Locations in New Kenda Gram panchayat.	₹ 14,15,540.00	Approved. Work will start tentatively from January.
<b>Condition(Ivii)</b>	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			

**Half Yearly EC Compliance report in respect of mines**

**Area (Cluster 11), ECL**

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	<p>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>
<b>compliance</b>	<p>Complied.</p> <p>“Corporate Environmental Policy 2012” of Coal India Limited has already been formulated.</p> <p>“Corporate Environmental Policy 2012” of Coal India Limited has prescribed standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/condition.</p> <p>The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions has been furnished in “Corporate Environmental Policy 2012” of Coal India Limited.</p> <p>The company is having a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company.</p>

<b>General Conditions</b>	
<b>Condition(i)</b>	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forests & Climate Change.
<b>Compliance</b>	<p>Complied.</p> <p>Change in mining technology and scope of working, if any, is being made with prior approval of the Ministry of Environment, Forests &amp; Climate Change.</p>
<b>Condition(ii)</b>	No change in the calendar plan of production for quantum of mineral coal shall be made.
<b>Compliance</b>	There shall be no change in the calendar plan of production for quantum of mineral coal.
<b>Condition(iii)</b>	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, SO2,NO monitoring. Locations of the stations shall be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with state pollution control board. Monitoring of

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

	heavy metals such as Hg,As, Ni,Cd, Cr etc carried out atleast once in six months.
<b>Compliance</b>	<b>Kenda-</b> Air quality monitoring is carried out by CMPDIL on every fortnight and all desired parameters are well within the prescribed limits. <b>Bankola-</b> Air quality monitoring is carried out by CMPDIL on fortnightly basis and all desired parameters are well within the prescribed limits. Ambient air quality report is enclosed.
<b>Condition(iv)</b>	Data on ambient air quality (PM10,PM2.5,SO2,and NO) and heavy metals such as Hg,As,Ni,Cd,Cr and other monitoring data shall be regularly submitted to the ministry including its concerned Regional office 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 EPA rules,1986 shall be furnished as part of compliance report.
<b>Compliance</b>	Air quality monitoring is carried out by CMPDIL on every fortnight and all desired parameters are well within the prescribed limits. Ambient air quality reports are enclosed.
<b>Condition(v)</b>	Adequate measure shall be taken for control of noise level 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.
<b>Compliance</b>	Noise level monitoring is carried out by CMPDIL on fortnightly basis. Noise data are enclosed.
<b>Condition(vi)</b>	Industrial wastewater (waste water and workshop from the mine ) shall be properly collected, treated so as to conform to the standards 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.
<b>Compliance</b>	Water discharged from the mine are tested in laboratory at CMPDI on fortnightly basis and found conforming to the MoEF schedule VI standards for discharge of effluents. The mine water quality enclosed.
<b>Condition(vii.)</b>	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the minerals shall be covered with the tarpaulins and optimally loaded.
<b>Compliance</b>	Vehicular emissions are kept under control and regularly monitored. Coal transportation from the mine to railway siding is being done by tarpaulin covered trucks. The loaded trucks are made wet at first and then covered with tarpaulins for

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

Period:- April 2019 to September 2019

	transportation.																												
<b>Condition(viii.)</b>	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 state pollution control board and data got analysed through a laboratory recognized under EPA Rules, 1986 .																												
<b>Compliance</b>	Monitoring of environmental parameters is carried out on regular basis by CMPDI. Laboratory at CMPDIL, Asansol is having all necessary facilities.																												
<b>Condition (ix.)</b>	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training on information on safety and health aspects.																												
<b>Compliance</b>	All protective devices have been provided to workmen and are replaced periodically. Adequate training to all personnel has also been provided. New recruits are trained at the VTC before their deployment. PMEs are carried out on all employees once in 5 years.																												
<b>Condition(x.)</b>	Occupational health surveillance programme of workers Shall be undertaken periodically to observe any contractions due to exposure due to dust and to take corrective measure, if needed and records 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.																												
<b>Compliance</b>	<p><b>Kenda- Complied.</b></p> <p>Every year, 20% of the workforce is covered under occupational health surveillance programme in form of Periodical Medical Examinations. Total no. of person which have gone through the PME in FY 2019-20 from Apr2019 to Sept2019 is given below:-</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 30%;">Name of the Area</th> <th rowspan="2" style="width: 20%;">Month</th> <th colspan="2" style="width: 50%;">PME achievement for the Month (Nos. of Person)</th> </tr> <tr> <th style="width: 20%;">ECL Employees</th> <th style="width: 10%;">Contractual worker</th> </tr> </thead> <tbody> <tr> <td rowspan="7" style="text-align: center; vertical-align: middle;"><b>Kenda Area</b></td> <td><b>April'2019</b></td> <td style="text-align: center;"><b>96</b></td> <td style="text-align: center;"><b>16</b></td> </tr> <tr> <td><b>May'2019</b></td> <td style="text-align: center;"><b>81</b></td> <td style="text-align: center;"><b>17</b></td> </tr> <tr> <td><b>June'2019</b></td> <td style="text-align: center;"><b>93</b></td> <td style="text-align: center;"><b>4</b></td> </tr> <tr> <td><b>July'2019</b></td> <td style="text-align: center;"><b>117</b></td> <td style="text-align: center;"><b>8</b></td> </tr> <tr> <td><b>August'2019</b></td> <td style="text-align: center;"><b>84</b></td> <td style="text-align: center;"><b>7</b></td> </tr> <tr> <td><b>September'2019</b></td> <td style="text-align: center;"><b>69</b></td> <td style="text-align: center;"><b>1</b></td> </tr> <tr> <td style="text-align: center;"><b>Total</b></td> <td style="text-align: center;"><b>540</b></td> <td style="text-align: center;"><b>53</b></td> </tr> </tbody> </table> <p><b>Bankola- Complied.</b></p> <p>Every year, 20% of the employees, workers are covered under occupational</p>	Name of the Area	Month	PME achievement for the Month (Nos. of Person)		ECL Employees	Contractual worker	<b>Kenda Area</b>	<b>April'2019</b>	<b>96</b>	<b>16</b>	<b>May'2019</b>	<b>81</b>	<b>17</b>	<b>June'2019</b>	<b>93</b>	<b>4</b>	<b>July'2019</b>	<b>117</b>	<b>8</b>	<b>August'2019</b>	<b>84</b>	<b>7</b>	<b>September'2019</b>	<b>69</b>	<b>1</b>	<b>Total</b>	<b>540</b>	<b>53</b>
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## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

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	<p>health surveillance programme in the form of Periodical Medical Examinations for any contractions due to exposure to dust and for other health related issues.</p> <p>This PME is mandatory for all employees. Special cases diagnosed during such PMEs are monitored at shorter intervals as directed by the PME Board of Doctors. All serious diseases and impairments are reported to DGMS at regular intervals. PME of 828 workers has been conducted in Bankola Area in the year 2019-20 along with 18 Spirometry and 15 Audiometry tests.</p>																		
<b>Condition(xi.)</b>	A separate environmental management cell with suitable qualified personnel shall be setup under the control of a senior executive, who will report directly to the head of the company.																		
<b>Compliance</b>	Complied. A separate environmental management cell with qualified personnel has been established for Kenda Area under Cluster 11. The cell reports to the respective Area GM and GM, Environment and Forest; ECL.																		
<b>Condition(xii.)</b>	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 concerned Regional office.																		
<b>Compliance</b>	<p><b>Kenda-</b> Funds for environmental protection as kept in budget each year is not diverted for other purposes. The ongoing activities under environment is as follows.</p> <table border="1"><thead><tr><th>S.No.</th><th>FY 2019-20</th><th>Name of Activity</th><th>Work awarded value (Rs. In Lakh)</th><th>Status of Work</th></tr></thead><tbody><tr><td>1.</td><td rowspan="3">April'2019 to Sept'2019</td><td>Construction of STP at New Kenda Colony under Kenda Area (ECL)</td><td>Rs.504.7835 Lakh</td><td>Work is in progress.</td></tr><tr><td>2.</td><td>Construction of rain water harvesting system at Kenda Area office under Kenda Area (ECL)</td><td>Rs. 2.25968 Lakh</td><td>Work is in progress</td></tr><tr><td>3.</td><td>Construction</td><td>Rs. 2.80618</td><td>Work is in</td></tr></tbody></table>	S.No.	FY 2019-20	Name of Activity	Work awarded value (Rs. In Lakh)	Status of Work	1.	April'2019 to Sept'2019	Construction of STP at New Kenda Colony under Kenda Area (ECL)	Rs.504.7835 Lakh	Work is in progress.	2.	Construction of rain water harvesting system at Kenda Area office under Kenda Area (ECL)	Rs. 2.25968 Lakh	Work is in progress	3.	Construction	Rs. 2.80618	Work is in
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**Half Yearly EC Compliance report in respect of mines**

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			of rain water harvesting system at Regional Hospital Chora under Kenda Area (ECL)	Lakh	progress.
	4.		Construction of washing platform along with ETP at SKOCP under Kenda Area.	Rs. 9.50160 Lakh	Work is in progress.
	5.		Installation of water sprinkling system at Coal Stock yard of Chora 7,9 pit under Kenda Area (ECL)	Rs.2.22840 Lakh	Work has been completed.
	<p><b>Bankola-</b> Funds for environmental protection as kept in budget each year is not diverted for other purposes.</p>				
<b>Condition(xiii.)</b>	<p>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 &amp; Climate Change at <a href="http://envfor.nic.in">http://envfor.nic.in</a>.</p>				
<b>Compliance</b>	Complied.				
<b>Condition(xiv.)</b>	<p>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.</p>				

## Half Yearly EC Compliance report in respect of mines

### Area (Cluster 11), ECL

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<b>Compliance</b>	<p>A copy of the environmental clearance letter for cluster 11 has been marked to concerned Panchayat / Zila Parishad, Municipal Corporation or Urban local body.</p> <p>The EC letter is uploaded on the company's website. The link is given : <a href="http://www.easterncol.gov.in">www.easterncol.gov.in</a></p>
<b>Condition (xv.)</b>	<p>A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.</p>
<b>Compliance</b>	<p>To be complied by State Pollution Control Board.</p>
<b>Condition(xvi.)</b>	<p>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.</p>
<b>Compliance</b>	<p>The monitoring data of environmental quality parameter (air, water and noise) 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 are being displayed on Company's website. Monitoring Report for Cluster is enclosed.</p> <p>The clearance letter is uploaded on the company's website. The link is given : <a href="http://www.easterncol.gov.in">www.easterncol.gov.in</a>.</p>
<b>Condition (xvii.)</b>	<p>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 Offices of CPCB and the SPCB.</p>
<b>Compliance</b>	<p>Complied. The six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions is regularly being submitted (both in haed copy and in Email) to MoEF &amp; CC RO Bhubaneswar &amp; WBPCB..in</p>
<b>Condition (xviii.)</b>	<p>The Regional Office of the Ministry located in the Region shall monitor compliances 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.</p>
<b>Compliance</b>	<p>Agreed.</p>
<b>Condition(xix)</b>	<p>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</p>

**Half Yearly EC Compliance report in respect of mines**

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	(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 CC by e-mail.
<b>Compliance</b>	Complied.

**Kenda Additional Condition**

<b>Additional Condition</b>	
<b>Condition</b>	The soil contamination through oil spillage/leakage should either be bio-remediated using specific technology available in the market, or sent to secured land fill facility authorized by the SPCB.
<b>Compliance</b>	Noted and Agreed.

**STRICTLY RESTRICTED**  
**FOR COMPANY USE ONLY RESTRICTED**

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

**ENVIRONMENT MONITORING REPORT  
OF  
CLUSTER NO. 11**

**(FOR THE MONTH OF JULY, 2019)**

**(KENDA & BANKOLA AREA)**

**Eastern Coalfields Limited**



***cmpdi***  
*A Mini Ratna Company*

**Regional Institute-1  
Asansol (WB)**

# **ENVIRONMENT MONITORING REPORT FOR CLUSTERNO. 11**

**(For the Month of July, 2019)**

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**CHAPTER - I**  
**INTRODUCTION**

1.0 The environmental monitoring has been carried out as per conditions laid down by MoEF&CC while granting environmental clearance to different projects. CMPDIL has trained manpower and well equipped laboratory to carry out monitoring, analysis and R&D work in the field of environment.

Reports have been prepared for submission to MoEF&CC and SPCB and other statutory authorities.



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**CHAPTER-II****AMBIENT AIR QUALITY MONITORING****2.1 Location of sampling station and their rationale:****2.1.1 Ambient Air Quality Sampling Locations****I. Industrial Area Monitoring Location****i) Chora pit no.10, Haripur (11A1): Industrial Area**

The sampler was placed at 10No. pit office of Chora colliery, Haripur to assess the ambient air quality of industrial area in the core zone where mining activities are in progress.

**ii) GM office, Bankola area (11A2): Industrial Area.**

The sampler was placed at GM office, Bankola. This site was selected to assess the present ambient air quality status in industrial area of core zone.

**iii) Sonapur Bazari project office (11A8): Industrial Area.**

The sampler was placed at Sonapur Bazari project office to assess the present ambient air quality status in industrial area of core zone.

**II. Residential Area Monitoring Location****i) Bahadurpur village hospital (11A6) : Residential Area**

The sampler was placed at Bahadurpur hospital. This site was selected to assess the present ambient air quality status in residential area.

**III. R N Colony Dispensary near Chichuria Village (11A7): Residential Area**

The Air sampler was placed at dispensary of R N colony, Sonapur Bazari. This site was selected to assess the present ambient air quality status in residential area of core zone of Sonapur Bazari OCP.

**2.2 Methodology of sampling and analysis**

Parameters chosen for assessment of ambient air quality were Particulate Matter (PM<sub>10</sub>), Fine Particulate Matter (PM<sub>2.5</sub>), Sulphur Di-oxide (SO<sub>2</sub>) and Nitrogen Oxides (NO<sub>x</sub>). Respirable Dust Sampler (RDS) & Fine Dust Sampler (FDS) were used for sampling of PM<sub>10</sub> & gaseous pollutants and PM<sub>2.5</sub> respectively. The samples were analysed at Environmental Laboratory, CMPDI, RI-I, Asansol.

## 2.3 Results & Interpretations

The results of Ambient Air Quality are presented in tabular form along with for each monitoring station. Sampling stations have been chosen keeping in view predominant wind direction and have been classified as permanent, pre monsoon (April – September) & post monsoon (October – March) air sampling stations. The interpretations of different parameters are given below:

### 2.3.1 Ambient air quality

#### **Particulate Matter (PM<sub>10</sub>)**

In Industrial area varies from 84.5 to 103.8  $\mu\text{g}/\text{m}^3$  & in Residential area from 79.5 to 88.3  $\mu\text{g}/\text{m}^3$ .

#### **Fine Particulate Matter (PM<sub>2.5</sub>)**

In Industrial area from 31.2 to 41.2  $\mu\text{g}/\text{m}^3$  & in Residential area from 31.3 to 33.6  $\mu\text{g}/\text{m}^3$

#### **Sulphur Dioxide (SO<sub>2</sub>):**

In Industrial area below 10  $\mu\text{g}/\text{m}^3$  & in Residential area below 10  $\mu\text{g}/\text{m}^3$ .

#### **Oxides of Nitrogen (NO<sub>x</sub>):**

In Industrial area varies from 17.5 to 19.6  $\mu\text{g}/\text{m}^3$  & in Residential area from 13.4 to 14.6  $\mu\text{g}/\text{m}^3$ .

**AMBIENT AIR QUALITY DATA**Name of the Company: **Eastern Coalfield Limited** Month: **August** Year : **2019**Name of the Project : **Mines of Cluster No. 11****Industrial Area****1<sup>st</sup> fortnight**

Station Code	Station Name	Date of Sampling	Parameters			
			PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
11A1	Chora pit no.10 Haripur	6-Aug-19	103.8	41.2	<10.0	18.5
11A2	GM office, Bankola area	7-Aug-19	87.3	38.7	<10.0	19.6
11A8	Sonepur Bazari project office	6-Aug-19	97.6	31.2	<10.0	17.8

**2<sup>nd</sup> fortnight**

Station Code	Station Name	Date of Sampling	Parameters			
			PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
11A1	Chora pit no.10 Haripur	20-Aug-19	98.4	38.7	<10.0	18.5
11A2	GM office, Bankola area	19-Aug-19	84.5	33.5	<10.0	19.6
11A8	Sonepur Bazari project office	20-Aug-19	102.6	35.4	<10.0	17.5

**Residential Area****1<sup>st</sup> fortnight**

Station Code	Station Name	Date of Sampling	Parameters			
			PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
11A6	Bahadurpur village hospital	6-Aug-19	81.4	33.6	<10.0	13.4
11A7	R N colony dispensary near Chichuria village	7-Aug-19	88.3	32.5	<10.0	14.3

**2<sup>nd</sup> fortnight**

Station Code	Station Name	Date of Sampling	Parameters			
			PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )
11A6	Bahadurpur village hospital	22-Aug-19	79.5	31.3	<10.0	13.4
11A7	R N colony dispensary near Chichuria village	20-Aug-19	81.6	32.5	<10.0	14.6

Environmental Standards for Ambient Air Quality (AAQ) :

Station Category	<i>Environmental standard for Raniganj Coalfield vide MOEF, Govt. of India, Gazette Notification No. GSR 742 (E) dated 25.09.2000 for 24 hourly samples at 500 meters from dust generating point</i>		<i>National Ambient Air Quality Standards (NAAQS), 2009 for industrial, residential and rural areas for 24 hours samples</i>	
	<b>Pollutant Concentration (<math>\mu\text{g}/\text{m}^3</math>)</b>			
	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>PM<sub>2.5</sub></b>
Industrial	300.0	120.0	120.0	60.0
Residential	100.00	80.0	80.0	

## CHAPTER – III

### WATER QUALITY MONITORING

#### 3.1 Location of sampling sites and their rationale

- i) **New Kenda OC Patch (11MW3)**  
This location has been selected to monitor the discharge quality of mine effluent water.
- ii) **Lower Kenda (11MW4)**  
This location has been selected to monitor the discharge quality of mine effluent water. The water is being supplied to colony quarters after sedimentation tank.
- iii) **Chora Block Incline (11MW5)**  
This location has been selected to monitor the discharge quality of mine effluent.
- iv) **Chora 7, 9 & 10 Pits (11MW6)**  
This location has been selected to monitor the discharge quality of mine effluent to natural surface streams.
- v) **Bahula UG (11MW7)**  
This location has been selected to monitor the discharge quality of mine effluent after sedimentation tank. The water is being used for sprinkling to Bhula railway siding
- vi) **C L Jambad UG (11MW8)**  
This location has been selected to monitor the discharge quality of mine effluent to natural surface streams after sedimentation tank.
- vii) **Siduli UG (11MW9)**  
This location has been selected to monitor the discharge quality of mine effluent to natural surface streams after sedimentation tank.
- viii) **Khandra UG (11MW10)**  
This location has been selected to monitor the discharge quality of mine effluent to natural surface streams after sedimentation tank.
- ix) **Shankarpur UG (11MW11)**  
This location has been selected to monitor the discharge quality of mine effluent to natural surface streams after sedimentation tank.

**3.2 Methodology of sampling and analysis**

Water samples were collected as per standard practice. The effluent samples were collected and analysed for five parameters on fortnightly basis and all parameters on Half-yearly basis. The Ground water samples were collected and analysed for all parameters on annualy basis. Parameters like pH and Free Residual Chlorine were analysed on-site while collecting the samples. Thereafter the samples were preserved and analysed at the field laboratory located at RI-I Office campus.

**3.3 Results & Interpretations**

The results are given in tabular form along with the applicable standards. Results are compared with General Standards for Discharge of Effluent (Schedule VI) in case of effluent/mine water sample and compared with IS.10500: 2012 in case of drinking water sample. Results show that most of the parameters are within the permissible limits.

## Cluster No. 11

CMPDIL

### WATER QUALITY DATA (Effluent Water)

Name of the Company: **Eastern Coalfield Limited.**

Month: **August.** Year: **2019.**

Name of the Project: **Mines of Cluster No. 11**

Name of the station & code:     **1. 11MW3- New Kenda OC.   2. 11MW4- Chora Block Incline.   3. 11MW5- Chora 7, 9 & 10 Pits.**  
   **4. 11MW6- Chora 7, 9 & 10 Pits.   5. 11MW7- Bahula UG.**

#### First Fortnight data

Sl. No.	Parameters	Analytical Results					General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Station Code	11MW3	11MW4	11MW5	11MW6	11MW7			
	Date of sampling	5-Aug-19	5-Aug-19	5-Aug-19	5-Aug-19	5-Aug-19			
1	pH	8.01	7.89	8.10	7.95	8.05	5.5 - 9.0	Electrometric	0.01
2	TSS	4	32	39	24	28	100 (Max)	Gravimetric Method	10.0
3	TDS	424	622	424	594	602	Not specified	Gravimetric Method	25.0
4	Oil & Grease	<2.0	<2.0	<2.0	<2.0	<2.0	10 (Max)	Partition Gravimetric	2.0
5	COD	24	28	32	36	32	250 (Max)	Closed Reflux	4.0

#### Second Fortnight data

Sl. No.	Parameters	Analytical Results					General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Station Code	11MW3	11MW4	11MW5	11MW6	11MW7			
	Date of sampling	21-Aug-19	21-Aug-19	21-Aug-19	21-Aug-19	21-Aug-19			
1	pH	7.39	8.01	7.15	8.23	7.75	5.5 - 9.0	Electrometric	0.01
2	TSS	36	34	36	28	28	100 (Max)	Gravimetric Method	10.0
3	TDS	436	718	434	678	594	Not specified	Gravimetric Method	25.0
4	Oil & Grease	<2.0	<2.0	<2.0	<2.0	<2.0	10 (Max)	Partition Gravimetric	2.0
5	COD	28	24	36	32	40	250 (Max)	Closed Reflux	4.0

*All values are expressed in mg/L unless specified.*

## Cluster No. 11

CMPDIL

### WATER QUALITY DATA (Effluent Water)

Name of the Company: **Eastern Coalfield Limited**

Month: **August**. Year: **2019**.

Name of the Project: **Mines of Cluster No. 11**

Name of the Station & Code:     **5. 11MW8- C L Jambad UG.     6. 11MW9- Siduli UG.     7. 11MW10- Khandra UG.**  
    **8. 11MW11- Shankarpur UG.**

#### First Fortnight data

Sl. No.	Parameters	Analytical Results				General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Station Code	11MW8	11MW9	11MW10	11MW11			
	Date of sampling	5-Aug-19	5-Aug-19	5-Aug-19	5-Aug-19			
1	pH	7.98	7.53	7.72	8.21	5.5 - 9.0	Electrometric	0.01
2	TSS	20	34	42	30	100 (Max)	Gravimetric Method	10.0
3	TDS	634	536	502	434	Not specified	Gravimetric Method	25.0
4	Oil & Grease	<2.0	<2.0	<2.0	<2.0	10 (Max)	Partition Gravimetric	2.0
5	COD	40	28	32	38	250 (Max)	Closed Reflux	4.0

#### Second Fortnight data

Sl. No.	Parameters	Analytical Results				General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
	Station Code	11MW8	11MW9	11MW10	11MW11			
	Date of sampling	21-Aug-19	21-Aug-19	21-Aug-19	21-Aug-19			
1	pH	8.09	7.10	7.31	8.42	5.5 - 9.0	Electrometric	0.01
2	TSS	32	36	40	32	100 (Max)	Gravimetric Method	10.0
3	TDS	658	524	568	428	Not specified	Gravimetric Method	25.0
4	Oil & Grease	<2.0	<2.0	<2.0	<2.0	10 (Max)	Partition Gravimetric	2.0
5	COD	32	28	24	32	250 (Max)	Closed Reflux	4.0

*All values are expressed in mg/L unless specified*

## Cluster No. 11

CMPDIL

### Well water level for the month of August, 2019

Sl. No.	Station Code	Location of Dugwell	Date of measurement	Water level (in Meters) Below Ground Level	MP (m)	Depth (m)	Dia (m)	Owner	Utility
1	11GWL1	Dugwell at Shankarpur village	17-Aug-19	4.80	0.82	18.7	3.9	ECL	Domestic
2	11GWL2	Dugwell at Bahadurpur Panchayet office	17-Aug-19	3.60	0.75	12.75	1.5	Govt	Domestic
3	11GWL3	Dugwell at Ananda Ashram at Khandra village	17-Aug-19	4.10	0.77	9.95	1.03	Govt.	Domestic

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**CHAPTER - IV****NOISE LEVEL QUALITY MONITORING****4.1 Location of sampling sites and their rationale**

- i) **Chora 10 UG (11N1)**  
Noise level meter placed at Chora 10 UG pit - top to assess the noise level at workplace.
- ii) **Lower Kenda UG (11N2)**  
Noise level meter placed at Lower Kenda UG pit - top to assess the noise level at workplace.
- iii) **Chora Block Incline (11N3)**  
Noise level meter placed at Chora Block Incline UG pit - top to assess the noise level at workplace.
- iv) **Chora 7 & 9 Pits (11N4)**  
Noise level meter placed at Chora 7&9 UG pit - top to assess the noise level at workplace.
- v) **Bahula UG (11N5)**  
Noise level meter placed at Bahula UG pit - top to assess the noise level at workplace.
- vi) **C L Jambad UG (11N6)**  
Noise level meter placed at C L Jambad UG pit - top to assess the noise level at workplace.
- vii) **Siduli UG (11N7)**  
Noise level meter placed at Siduli UG pit - top to assess the noise level at workplace.
- viii) **Khandra UG (11N8)**  
Noise level meter placed at Khandra UG pit - top to assess the noise level at workplace.
- ix) **Shankarpur UG (11N9)**  
Noise level meter placed at Shankarpur UG pit - top to assess the noise level at workplace.
- x) **Shankarpur Face 4 OCP (11N10)**  
Noise level meter placed at mine site to assess the noise level at workplace.
- xi) **New Kenda UG (11N11)**  
Noise level meter placed at New Kenda UG pit - top to assess the noise level at workplace.

### 4.2 Methodology of sampling and analysis

Noise level monitoring is being carried out on quarterly basis. Noise level measurements were taken in form of 'Leq' using Integrated Data Logging Sound Level Meter (Make: RION, Model: NL-52). Noise levels were measured for about one hour. 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 only. The observed values were compared with standards prescribed in NAAQS, 2009 in respect of noise for Industrial, Commercial and residential areas. The observed values at all the monitoring locations are found to be within permissible limits.

The monitored values are presented in tabular form along with the applicable standard permissible limits.

## Cluster 11

CMPDIL

### NOISE LEVEL DATA

Name of the Company: **Eastern Coalfield Limited**    Month : **August**    Year : **2019**.

Name of the Project : **Kenda Area**

Name of the Stations & Code :

1. 11N1- Chora 10 UG	2. 11N2- Lower Kenda
3. 11N3- Chora Block Incline	4. 11N4- Chora 7 & 9 Pits
5. 11N5- Bahula UG	6. 11N6- C L Jambad UG
7. 11N7- Siduli UG	
8. 11N8- Khandra UG	9. 11N9- Shankarpur UG
10. 11N10- Shankarpur face 4 OCP	11. 11N11- New Kenda UG

Sl. No.	Station Code	Station Name	Measurement Details			*Permissible Limit of Noise level in dB(A)
			Date	Duration (In Hrs.)	Noise level dB(A)LEQ	
1	11N1	Chora 10 UG	19-Aug-19	10.00 to 11.00	72.6	75
2	11N2	Lower Kenda	19-Aug-19	11.30 to 12.30	68.5	75
3	11N3	Chora Block Incline	19-Aug-19	8.30 to 9.30	63.7	75
4	11N4	Chora 7 & 9 Pits	20-Aug-19	11.00 to 12.00	61.2	75
5	11N5	Bahula UG	6-Aug-19	8.00 to 9.00	66.5	75
6	11N6	C L Jambad UG	6-Aug-19	11.00 to 12.00	71.3	75
7	11N7	Siduli UG	6-Aug-19	12.30 to 13.30	64.6	75
8	11N8	Khandra UG	6-Aug-19	9.30 to 10.30	66.8	75
9	11N9	Shankarpur UG	7-Aug-19	10.00 to 11.00	62.5	75
10	11N10	Shankarpur face 4 OCP	20-Aug-19	8.00 to 9.00	63.9	75
11	11N11	New Kenda UG	20-Aug-19	9.30 to 10.30	64.6	75

***National Ambient Air Quality Standards (NAAQS) in respect of noise for Industrial, commercial and residential areas.***

Station Category	Limits for noise (Leq dB (A))	
	Day Time: 6.00 AM to 10.00 PM	Night Time: 10.00 PM to 6.00 AM.
Industrial	75.0	70.0
Commercial	65.0	55.0
Residential	55.0	45.0

Letter No :- 1260

Date :- 11/05/19



**Eastern Coalfields Limited.**  
**Bankola Area Hospital, PME Section**  
**Bankola Area.**


**Monthly Report of PME done for the Month of Apr. 2019.**

Sl. No.	Name of Colliery	PME done		
1	Bankola Colliery	25		
2	S.S.Pur Colliery	79		
3	Khandra Colliery	13	Pathology	88
4	Kumardihi A Colliery	1	X Ray	122
5	Kumardihi B Colliery	2	ECG	10
6	Moira Colliery	0	Spirometry	03
7	Tilaboni Colliery	7	Audiometry	03
8	Sankarpur Colliery	6		
9	Nakrakonda Colliery	0		
10	GM Office	0		
11	Area Hospital	0		
12	U.R.W	0		
	<b>TOTAL</b>	<b>133</b>		
*	Contra.Wkr	0		
*	Female Wkr	1		
*	> 45	93		
*	< 45	40		

Dated 6<sup>th</sup> May.2019.

Forwarded to  
Area Safety Officer,  
Bankola Area

X  
CMS (I/C) Sanetia  
for necessary action  
Anshuman Das  
11/5/19

  
P.M.E. In Charge,  
Bankola Area Hospital  
Bankola Area E.C.L



O/C

**Eastern Coalfields Limited.**  
Bankola Area Hospital, PME Section  
Bankola Area.

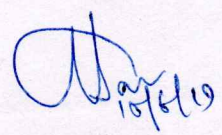
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**Monthly Report of PME done for the Month of May.2019.**

Sl. No.	Name of Colliery	PME done		
1	Bankola Colliery	23		
2	S.S.Pur Colliery	82		
3	Khandra Colliery	06	Pathology	148
4	Kumardihi A Colliery	12	X Ray	133
5	Kumardihi B Colliery	16	ECG	14
6	Moirra Colliery	0	Spirometry	02
7	Tilaboni Colliery	13	Audiometry	03
8	Sankarpur Colliery	13		
9	Nakrakonda Colliery	0		
10	GM Office	0		
11	Area Hospital	0		
12	U.R.W	0		
	<b>TOTAL</b>	<b>165</b>		
*	Contrac.Wkr	17		
*	Female Wkr	1		
*	> 45	130		
*	< 45	35		

True

Dated 10<sup>th</sup> May.2019.

  
 P.M.E. In Charge,  
 Bankola Area Hospital

  
 19/5/19  
 ASO/BA  
 CMS/HS

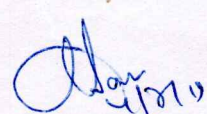


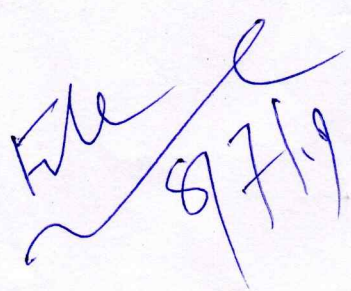
**Eastern Coalfields Limited.**  
Bankola Area Hospital, PME Section  
Bankola Area.

**Monthly Report of PME done for the Month of Jun. 2019.**

Sl. No.	Name of Colliery	PME done		
1	Bankola Colliery	28		
2	S.S.Pur Colliery	43		
3	Khandra Colliery	10	Pathology	135
4	Kumardihi A Colliery	26	X Ray	138
5	Kumardihi B Colliery	16	ECG	13
6	Moirā Colliery	0	Spirometry	3
7	Tilaboni Colliery	35	Audiometry	2
8	Sankarpur Colliery	7		
9	Nakrakonda Colliery	0		
10	GM Office	0		
11	Area Hospital & RW	0		
	<b>Total</b>	<b>165</b>		
*	Contract labour	4		
*	Female Worker	14		
*	Worker Aged >45	114		
*	Worker Aged < 45	51		

Dated 04<sup>th</sup> July. 2019.

  
P.M.E. In Charge,  
Bankola Area Hospital

  
9/7/19



**Eastern Coalfields Limited.**  
**Bankola Area Hospital, PME Section**  
**Bankola Area.**

**Monthly Report of PME done for the Month of July. 2019.**

Sl. No.	Name of Colliery	PME done		
1	Bankola Colliery	26		
2	S.S.Pur Colliery	38		
3	Khandra Colliery	5	Pathology	135
4	Kumardihi A Colliery	15	X Ray	125
5	Kumardihi B Colliery	9	ECG	5
6	Moirra Colliery	0	Spirometry	3
7	Tilaboni Colliery	36	Audiometry	2
8	Sankarpur Colliery	6		
9	Nakrakonda Colliery	0		
10	GM Office	0		
11	Area Hospital & RW	0		
	<b>Total</b>	<b>135</b>		
*	Contract labour	2		
*	Female Worker	3		
*	Worker Aged >45	99		
*	Worker Aged < 45	36		

**Dated 05<sup>th</sup> Aug.2019.**

P.M.E. In Charge,  
 Bankola Area Hospital

*Filed to  
 1) ASO IB Area  
 2) CMEs IC  
 RCL. H.Q. Sundergarh*

L = 1543, Dt :- 20/09/19

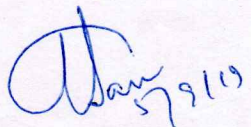


**Eastern Coalfields Limited.**  
Bankola Area Hospital, PME Section  
Bankola Area.

**Monthly Report of PME done for the Month of Aug. 2019.**

Sl. No.	Name of Colliery	PME done		
1	Bankola Colliery	29		
2	S.S.Pur Colliery	37		
3	Khandra Colliery	15	Pathology	136
4	Kumardihi A Colliery	03	X Ray	130
5	Kumardihi B Colliery	8	ECG	5
6	Moira Colliery	0	Spirometry	3
7	Tilaboni Colliery	19	Audiometry	2
8	Sankarpur Colliery	27		
9	Nakrakonda Colliery	0		
10	GM Office	0		
11	Area Hospital & RW	0		
	<b>Total</b>	<b>138</b>		
*	Contract labour	9		
*	Female Worker	2		
*	Worker Aged >45	109		
*	Worker Aged < 45	29		

Dated 05<sup>th</sup> Sept. 2019.

  
P.M.E. In Charge,  
Bankola Area Hospital

Endorsed  
1. C.A. & I.C. BCL HQ  
2. ASO, Bankola Area  
12/9/19



**Eastern Coalfields Limited.**  
Bankola Area Hospital, PME Section  
Bankola Area.

**Monthly Report of PME done for the Month of Sept. 2019.**

SI NO	Name of Coll	PME done		
1	Bankola Colliery	21		
2	S.S.Pur Colliery	30		
3	Khandra Colliery	11	Pathology	92
4	Kumardihi A Colliery	1	X Ray	79
5	Kumardihi B Colliery	9	ECG	8
6	Moira Colliery	0	Spirometry	4
7	Tilaboni Colliery	3	Audiometry	3
8	Sankarpur Colliery	17		
9	Nakrakonda Colliery	0		
10	GM Office	0		
11	Area Hospital	0		
	<b>Total</b>	<b>92</b>		
*	Contract labour	14		
*	Female Worker	0		
*	Worker Aged >45	69		
*	Worker Aged < 45	23		

Dated 8<sup>th</sup> Oct. 19.

P.M.E. In Charge,  
Bankola Area Hospital