FORM - 1

(I) Basic Information

1	Name of the project	Revised Cluster No. 11 comprising 11 mines of ECL in Raniganj Coalfield having total leasehold area of 4218 Ha and capacity of 8.20 MTY. Note: EC has been granted for Cluster No. 11 on 21 – 07 – 2015 for 11 (eleven) mines for a capacity of 10.90 MTY. Need for EC Amendment In view of the production target set by CIL, a re-assessment of mine capacities has been carried out for the cluster. This re-assessment / rationalization have been done based on present condition and capability of the mines for achieving optimum production levels. Hence, amendment of EC is sought for the said modifications.
2	S.No. in the schedule	1 (a)
3	Proposed capacity / area / length / tonnage to be handled / command area / lease area / number of wells to be drilled	Total No. of Mines : 11 (Eleven) Coal Production Capacity : 8.20 MTY Cluster Area (Leasehold) : 4218 Ha Note: There is no change sought in the above parameters. However, capacities of individual mines have been re-assessed as shown in at Sl. No. 4.
4	New / Expansion / Modernization	The proposal is for EC amendment having total peak capacity of 8.20 MTY. Details are furnished below:

List of Mines in Cluster 11 with Proposed Re-assessment of Mine Capacities for EC Amendment							
AS PER EC LETTER DATED 21st JULY 2015							
S. No	**Name of Mine**	**Mine**	**UG/OC**	**ML Area (Ha)**	**Normative/ Peak Capacity (MTY)**		**Life (Years)**
1	**Krishnanagar**	**1**	**UG**	772	**0.24**	***0.30***	>25
2	**Haripur Group of Mines**		**UG+OC**	853	**1.99**	**2.27**	>25
A	Haripur	**2**	UG		0.60	0.78	>25
B	Chora Block Incline	**3**	UG		0.99	0.99	>25
C	Chora 7,9 & 10 Pit	**4**	UG				
D	Bonbahal OC Patch (25 Ha)*	**5**	**OC**		0.40	0.50	3
E	Shankarpur / CL Jambad OC Patch/ mine (52 Ha)	**6**	**OC**		Exhausted and being backfilled		
3	**New Kenda Group of Mines**	**7**	**UG+OC**	742	**3.71**	***4.79***	>25
A	New Kenda		UG		0.11	0.14	>25
B	W Kenda OC Patch / Mine (49 Ha)*		OC		0.60	0.75	2
C	New Kenda OC Mine (240 Ha)*		OC		3.00	3.90	8
4	**Bahula Group of Mines**	**8**		676	**0.42**	**0.55**	>25
A	Lower Kenda		UG		0.13	0.17	>25
B	Bahula		UG		0.24	0.31	>25
C	CL Jambad		UG		0.05	0.07	>25
5	**Siduli**	**9**	**UG**	335	**0.30**	**0.30**	>25
6	**Khandra**	**10**	**UG**	388	**0.39**	**0.39**	>25
7	**Shankarpur Project**	**11**		452	**2.00#**	**2.30#**	
A	Shankarpur		UG		1.16	1.33	>25
B	Shankarpur OC Patch/ mine (42 Ha)*		OC		2.00	2.30	4
				4218	***9.05***	***10.90***	
* New proposed patches/mines (Area of the patch given in brackets); **# Mining will be done in phased manner**							
AS PER NEW PROPOSAL							
S. No	**Name of Mine**	**Mine**	**UG/OC**	**ML Area (Ha)**	**Existing Peak Capacity (MTY)**	**Proposed EC Capacity (MTY)**	**Life (Years)**
1	**Krishnanagar**	**1**	**UG**	772	***0.30***	***0.05***	>25
#	**Haripur Group of Mines**		**UG+OC**	853	**2.27**	**2.30**	
2	Haripur	**2**	**UG+OC**		0.78	0.75	15
3	Chora Block Incline	**3**	UG		0.99	0.10	>25
4	Chora 7,9 & 10 Pit	**4**	UG			0.15	
5	Bonbahal OC Patch (25 Ha)*	**5**	**OC**		0.50	0.50	3
6	Shankarpur / CL Jambad OC Patch/ mine (52 Ha)	**6**	**OC**		Exhausted and being backfilled	0.80	6
7	**New Kenda Group of Mines**	**7**	**UG+OC**	742	***4.79***	***2.00***	
A	New Kenda		UG		0.14	0.05	>25
B	W Kenda OC Patch / Mine (49 Ha)*		OC		0.75	0.75	6
C	New Kenda OC Mine (240 Ha)*		OC		3.90	1.20	12
8	**Bahula Group of Mines**	**8**		676	**0.55**	**0.45**	>25
A	Lower Kenda		UG		0.17	0.15	>25
B	Bahula		UG		0.31	0.25	>25
C	CL Jambad		UG		0.07	0.05	>25
9	**Siduli**	**9**	**UG+OC**	335	**0.30**	**1.20**	>25
10	**Khandra**	**10**	**UG**	388	**0.39**	**0.20**	>25
11	**Shankarpur Project**	**11**		452	**2.30#**	**2.00#**	
A	Shankarpur		UG		1.33	1.16	>25
B	Shankarpur OC Patch/ mine (42 Ha)*		OC		2.30	2.00	4
				4218	***10.90***	***8.20***	
* New proposed patches/mines (Area of the patch given in brackets) **# Mining will be done in phased manner**							

5	Existing Capacity/Area etc	Existing EC capacity is 10.90 MTY and Cluster area is 4218.0 Ha. Approved vide EC letter no. J – 11015/245/2011 – IA – II (M) dated 21-07-2015.
6	Category of Project. i.e. 'A' or 'B'	A
7	Does it attract the general condition? If yes, Please specify	No
8	Does it attract the specific condition? If yes, Please specify	No

9	Location				
	Plot / Survey / Khasra No				
	Name of units under regrouped mines	**Name of Mouza**	**JL No**	**Thana**	**Dist.**
	New Kenda	Kenda	73	Jamuria	Burdwan
		Chakdola	58	Jamuria	Burdwan
		Parasea	74	Jamuria	Burdwan
	Bahula	Bahula	30	Andal	Burdwan
		Parascole	38	Andal	Burdwan
		Bahula	30	Andal	Burdwan
		Chhora	29	Andal	Burdwan
		Bahula	30	Andal	Burdwan
		Parasea	74	Jamuria	Burdwan
		Kenda	73	Jamuria	Burdwan
	Haripur	Haripur	24	Andal	Burdwan
		Chinchuria	69	Jamuria	Burdwan
		Dahuka	70	Jamuria	Burdwan
		Haripur	24	Andal	Burdwan
		Chora	29	Andal	Burdwan
		Kumarkhala	25	Andal	Burdwan
		Haripur	24	Andal	Burdwan
	Chora	Chora	29	Andal	Burdwan
		Bahula	30	Andal	Burdwan
		Chora	29	Andal	Burdwan
		Chora	29	Andal	Burdwan
		Banbahal	26	Andal	Burdwan
		Sankarpur	28	Andal	Burdwan
	Lower Kenda	Kenda	73	Jamuria	Burdwan
		Chora	29	Andal	Burdwan
	C. L. Jambad	Bahula	30	Andal	Burdwan
		Parascole	38	Andal	Burdwan
		Siduli	31	Andal	Burdwan
		Mukundapur	33	Andal	Burdwan
	Siduli	Siduli	31	Andal	Burdwan
		Mukundapur	33	Andal	Burdwan
		Siduli	31	Andal	Burdwan
		Khandra	32	Andal	Burdwan
		Bahula	30	Andal	Burdwan

		Siduli	31	Andal	Burdwan
		Siduli Chora	31 29	Andal Andal	Burdwan Burdwan
		Chora Siduli	29 31	Andal Andal	Burdwan Burdwan
		Chora Bahula Siduli	29 30 31	Andal Andal Andal	Burdwan Burdwan Burdwan
		Bahula Siduli	30 31	Andal Andal	Burdwan Burdwan
	Krishnanagar	Chakdola Domrana	58 72	Jamuria Jamuria	Burdwan Burdwan
		Domrana Bamanbandh	72 71	Jamuria Jamuria	Burdwan Burdwan
		Chinchuria Bamanbandh Haripur	69 71 24	Jamuria Jamuria Jamuria	Burdwan Burdwan Burdwan
		Chinchuria Domrana	69 72	Jamuria Jamuria	Burdwan Burdwan
		Dahuka Chinchuria	70 69	Jamuria Jamuria	Burdwan Burdwan
		Dhasal	07	Jamuria	Burdwan
	Khandra	Khandra Ukhra	32 18	Andal Andal	Burdwan Burdwan
		Khandra	32	Andal	Burdwan

	Village	See Table above in this Section (9)
	Tehsil	
	District	Burdwan
	State	West Bengal
10	Nearest railway station / airport along with distance in kms.	Andal Railway Station at 10 kms and Andal Airport at 20 kms
11	Nearest Town, city, District Headquarters along with distance in kms.	It is located 30 km east of Asansol. District Headquarters are at Burdwan located about 100 kms to the East.
12	Village Panchayats Zilla Parishad Municipal Corporation, Local body (complete postal Addresses with telephone nos. to be given)	1. Chairman, Jamuria Municipality Town + P.O – Jamuria Dist : Burdwan, PIN : 713 336, Phone : 0341-2455562/2455984, Fax : 0341-245562 2. Block Development Officer, Jamuria, Vill.+ P.O. – Bahadurpur, Dist : Burdwan, PIN : 713 362, Phone : 0341- 2667047
13	Name of the applicant	Eastern Coalfields Ltd.
14	Registered Address	PO : Sanctoria, Dist: Burdwan, West Bengal
15	Address for correspondence:	
	Name	B. N. Prasad
	Designation (Owner / Partner / CEO	General Manager (Environment)

	Address	Barachak House, PO: Sitarampur, Asansol, Dist: Burdwan, West Bengal
	Pin Code	713359
	E-mail	envecl@yahoo.com, eclenv@gmail.com
	Telephone No.	0314-2254510
	Fax No.	-
16	Details of Alternative Sites examined, if any. Location of these sites should be shown on a toposheet	Village- District-State (Not Applicable) 1. 2. 3.
17	Interlinked Projects	None
18	Whether separate application of interlinked Project has been submitted	Not Applicable
19	If yes, date of submission	Not Applicable
20	If no, reason	Not Applicable
21	Whether proposal involves approval / clearance under 1. The Forest (Conservation) Act, 1980 2. The Wildlife (Protection) Act, 1972 3. The CRZ Notification, 1991	 No No No
22	Whether there is any Government Order/ Policy relevant/relating to the site	No
23	Forest land involved(hectares)	Nil
24	Whether there is any litigation pending against the project and/or land in which the project is proposed to be set up?	No

(II) Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

<table>
<tr><th>S.No</th><th>Information/Checklist confirmation</th><th>Yes/No</th><th>Details thereof (with approximate quantities /rates, wherever possible) with source of information data</th></tr>
<tr><td>1.1</td><td>Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)</td><td>Yes</td><td>76 Ha land will be required for setting up infrastructure for the newly conceived projects. Opencast mining within the cluster will also lead to change in land-use. These voids will be completely backfilled and planted upon after mining.
<table>
<tr><td>Sl. No.</td><td>Mine head</td><td>As per approved EIA/EMP</td><td>As per revised plan</td></tr>
<tr><td>1</td><td>Quarry Area (Ha)</td><td>337.50*</td><td>528.50*</td></tr>
<tr><td>2.</td><td>Subsided Area</td><td>Nil</td><td>Nil</td></tr>
</table>
*including 52.0 Ha of quarry area already exhausted and being backfilled as per approved EIA/EMP
Thus, additional 191 Ha land to be broken up for mining. A significant portion of the land required for quarrying is already in possession of</td></tr>
</table>

<table>
<tr><th>S.No</th><th>Information/Checklist confirmation</th><th>Yes/No</th><th>Details thereof (with approximate quantities /rates, wherever possible) with source of information data</th></tr>
<tr><td></td><td></td><td></td><td>ECL.
The revised mining plan proposes 3 (three) new quarries, namely, Shankarpur / C L Jambad OC, Siduli OC and Haripur OC. Thus, total area to be quarried within the cluster will increase from 337.5 Ha to 528.5 Ha. This is further elucidated in the table given below –
<table>
<tr><th>#</th><th>Name of OC Mine</th><th>Within Leasehold of Mine</th><th>Quarry area as per Existing EC (Ha)</th><th>Additional Quarry area proposed / Additional Area (Ha)</th><th>Remarks</th></tr>
<tr><td>1</td><td>Bonbahal OC</td><td>Chora Block Incline UG</td><td>25.0</td><td>-</td><td rowspan="8">The quarry area is within the mine lease boundary; there is no increase in mine lease area and overall area of the cluster</td></tr>
<tr><td>2</td><td>Shankarpur / C L Jambad OC</td><td>Chora 7, 9 & 10 Pit UG</td><td>52.0 (Already Exhausted)</td><td>46.0 (Extension)</td></tr>
<tr><td>3</td><td>New Kenda OC</td><td>New Kenda UG</td><td>169.5</td><td>-</td></tr>
<tr><td>4</td><td>West Kenda OC</td><td>-do-</td><td>49.0</td><td>-</td></tr>
<tr><td>5</td><td>Shankarpur OC</td><td>Shankarpur UG</td><td>42.0</td><td>-</td></tr>
<tr><td>6</td><td>Haripur OC</td><td>Haripur UG</td><td></td><td>100.0</td></tr>
<tr><td>7</td><td>Siduli OC</td><td>Siduli UG</td><td></td><td>45.0</td></tr>
<tr><td colspan="2">Total</td><td></td><td>337.5</td><td>191.0</td><td></td></tr>
<tr><td colspan="3">Grand Total</td><td colspan="2">528.50</td><td></td></tr>
</table></td></tr>
<tr><td>1.2</td><td>Clearance of existing land, vegetation and buildings?</td><td>Yes</td><td>Land will be broken up during opencast mining leading to clearance of existing vegetation and habitations. Please also refer 2.1.
Additional R & R is also proposed to be done for 2 new projects within the cluster as given below:
<table>
<tr><th rowspan="2">Sl. No.</th><th rowspan="2">Name of OC Patch / Project</th><th colspan="2">No. of PAFs</th></tr>
<tr><th>As per EC</th><th>As per revised plan</th></tr>
<tr><td>1</td><td>New Kenda OC Patch</td><td>500</td><td>500</td></tr>
<tr><td>2</td><td>Shankarpur UG & OC Project</td><td>725</td><td>725</td></tr>
<tr><td>3</td><td>Shankarpur / C L Jambad Extension OC Patch</td><td>-</td><td>50</td></tr>
<tr><td>4.</td><td>Siduli OC & UG</td><td>-</td><td>3000</td></tr>
<tr><td colspan="2">Total</td><td>1225</td><td>4275</td></tr>
</table>
Thus, additional 3050 PAFs to be rehabilitated.</td></tr>
<tr><td>1.3</td><td>Creation of new land uses?</td><td>Yes</td><td>New land-uses will be created due to opencast mining and areas subjected to subsidence due to underground mining by caving method. The new land uses will generally be in the form of plantations over mined-out / subsided areas.</td></tr>
<tr><td>1.4</td><td>Pre-construction investigations e.g. bore houses, soil testing?</td><td>No</td><td>Geological Blocks within the cluster have already been explored by GSI, CMPDI, ECL & MECL. No further investigation is required.</td></tr>
<tr><td>1.5</td><td>Construction works?</td><td>No</td><td>Construction works will be required for setting up infrastructure for the newly conceived projects.</td></tr>
<tr><td>1.6</td><td>Demolition works?</td><td>Yes</td><td>Demolition of buildings will be required for OC mining.</td></tr>
<tr><td>1.7</td><td>Temporary sites used for</td><td>No</td><td>Temporary sites will be used for the construction works.</td></tr>
</table>

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
	construction works or housing of construction workers?		
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Excavation works due to opencast mining. Refer Sl 1.1
1.9	Underground works including mining or tunneling?	Yes	Underground mining by Bord & Pillar method of mining in conjunction with sand stowing and below excavated and backfilled areas with caving.
1.10	Reclamation works?	Yes	Backfilling of OC voids after re-handling of OB in external dumps followed up with plantation.
1.11	Dredging?	No	Not applicable.
1.12	Offshore structures?	No	Not applicable.
1.13	Production and manufacturing processes?	Yes	Cluster capacity is 10.90 MTY. Present production from the cluster is 1.33 MTY (2014 – 15).
1.14	Facilities for storage of goods or materials?	Yes	Coal is stored in hoppers or ground stockpiles before transport to Railway Sidings
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	Mine water discharged from the mines is allowed to settle in settling tanks. Most of this water is reused for dust suppression and stowing and part of it is used for domestic and community use. The remaining water is either discharged into local nullahs or is used for irrigation of agricultural land. Industrial Waste Water: The cluster generates about 1205 m^3/day of waste water out of which 670 m^3/day needs to be routed through O & G traps while the remainder 535 m^3/day can be discharged after settling of suspended particulates for irrigation / into local nallahs. Domestic Waste Water: The cluster generates about 4132 m^3/day of domestic waste water which is routed to soak-pits. Solid Waste in the form of OB is dumped externally and then re-handled and backfilled into the OC voids. Since the OB material is mostly shale and sandstone, no treatment is needed.
1.16	Facilities for long term housing of operational workers?	Yes	Adequate housing facilities for workers have already been provided at all the existing mines. Some additional housing facilities will be required for the newly conceived projects.
1.17	New road, rail or sea traffic during construction or operation?	No	
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	
1.19	Closure or diversion of existing transport routes	No	

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
	or infrastructure leading to changes in traffic movements?		
1.20	New or diverted transmission lines or pipelines?	Yes	Transmission lines will be diverted to facilitate OC mining.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	
1.22	Stream crossings?	Yes	The drainage is controlled by Damodar river. Singaran Nallah traverses the cluster along with a few of its seasonal tributaries which eventually drain into Damodar. The topography of the area is characterized by a gently sloping surface towards river Damodar.
1.23	Abstraction or transfers of water from ground or surface waters?	Yes	Water accumulating in the mines is continuously pumped out. The quantity of pumping depends upon the make of water in the mine and varies from mine to mine. Maximum mine water removal is during the monsoons. No surface water is needed for mining process. Part of discharged mine water is used for stowing, plantation, and dust-suppression. Mine water after filtration is also used for domestic purposes. Remainder is discharged into local nallahs near the mines or is used for irrigation, which recharges the ground-water. Thus, most of the mine discharge is gainfully utilized.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	Yes	Although no alterations have been proposed to the surface water bodies like nallah and tanks / ponds, the surface run-off pattern is likely to be affected due to change in topography in areas broken up for opencast mining or subsided due to caving.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	There is movement of mining workers and other personnel between the mines and colonies. Coal from the mines is transported by road to Railway Sidings located within this cluster.
1.26	Long-term dismantling or decommissioning or restoration works?	Yes	Sand stowing in underground mines forms part of progressive mine closure and is started immediately with beginning of depillaring operations. After cessation of underground mining activities, all the entries to the mines shall be effectively sealed off to avoid any accident. The service buildings where not needed any further shall be demolished. The external OB dumps created during opencast mining will be re-handled and backfilled into the quarry voids and reclaimed with plantation.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	
1.28	Influx of people to an area in either temporarily or permanently?	Yes	Influx of people has taken place due to direct and indirect employment opportunities.

S.No	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.29	Introduction of alien species?	No	
1.30	Loss of native species or genetic diversity?	No	
1.31	Any other actions?	No	

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

<table>
<tr><th>S.No.</th><th>Information/checklist confirmation</th><th>Yes/No</th><th>Details thereof (with approximate quantities /rates, wherever possible) with source of information data</th></tr>
<tr><td>2.1</td><td>Land especially undeveloped or agricultural land (ha)</td><td>Yes</td><td>The total land to be broken up for opencast mining is 528.50 Ha which includes 52.0 Ha which has already been quarried. Apart from this, about 57.0 Ha will be brought under subsidence due to caving in CM projects. 76 Ha additional land will also be required for setting up infrastructure for the newly conceived projects. The above identified land contains a village which will be rehabilitated along with undeveloped tenancy land. Due R & R and compensation has been proposed for the land acquisition. Please also refer 1.2.
The total R & R cost is given in the table below:
<table>
<tr><th>Sl. No.</th><th>Name of OC Patch / Caving</th><th>No. of PAFs</th><th>R & R Cost (in Rs. crore)</th></tr>
<tr><td>1</td><td>New Kenda</td><td>500</td><td>53.77</td></tr>
<tr><td>2</td><td>Shankarpur</td><td>725</td><td>6.64</td></tr>
<tr><td>3</td><td>Shankarpur / C L Jambad OC Extension</td><td>50</td><td>1.40</td></tr>
<tr><td>4</td><td>Siduli</td><td>3000</td><td>430.74</td></tr>
<tr><td colspan="2">Total</td><td>4275</td><td>492.55</td></tr>
</table></td></tr>
<tr><td>2.2</td><td>Water (expected source & competing users) unit: KLD</td><td>Yes</td><td>Water uses is given below:
✓ Total Mine pumping from all the mines within the cluster: 17510 KLD.
✓ Total industrial demand for the cluster: 4138 KLD.
✓ Total domestic supply: 5508 KLD.
✓ Excess water to the tune of 2210 KLD is being supplied to the local villages.
✓ There is further scope for augmenting this supply from the excess mine discharge of around 5650 KLD.
Part of mine water is used for plantation, and dust-suppression. Mine water after filtration is also used for domestic purposes. Remainder is discharged into local nallah or is used for irrigation.
There are no competing users of mine water.
Potable water supply is met from RCFA water supply network and also from filtration of the mine water in existing filtration plants.</td></tr>
<tr><td>2.3</td><td>Minerals (MT)</td><td>Yes</td><td>Sand is required for stowing in underground mines. Source of sand is Ajay river flowing to the north of the cluster.</td></tr>
</table>

S.No.	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
			Diesel is used for operating the dumpers and trucks.
2.4	Construction material , stone, aggregates and soil (expected source – MT)	No	
2.5	Forests and timber (source – MT)	Yes	Some timber is required for laying of underground tracks and for roof support in underground mines and is obtained from the forest department.
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Power Supply from Dishergarh Power Supply & WBSEB
2.7	Any other natural resources (use appropriate standard units)	No	

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	Not Applicable
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Not Applicable
3.3	Affect the welfare of people e.g. by changing living conditions?	No	Not Applicable
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.	No	Not Applicable
3.5	Any other causes	No	Not Applicable

4. Production of solid wastes during construction or operation or decommissioning (MT/month):

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	Yes	**Opencast Mine**: As per the revised mining plan, overburden dump to the tune of 282.77 Mm^3 will be backfilled in the quarry void and will be planted upon. **Underground Mine**:

			Very little amount of solid waste in the form of shale and sandstone mixed with coal is generated by the underground mines which is segregated at surface by hand-picking.
4.2	Municipal waste (domestic and or commercial wastes)	Yes	Small quantities of domestic waste is generated from the colonies which are regularly transported by the vehicles of municipality / corporation.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	Used engine oil, oil filters, batteries of automobiles and cap-lamps are generated and disposed off as per proper procedure.
4.4	Other industrial process wastes	No	
4.5	Surplus product	No	
4.6	Sewage sludge or other sludge from effluent treatment	Yes	The mine water contains very less suspended solids since it is allowed to settle in mine sumps before being pumped out. Content of suspended solids is high in those underground mines where stowing is done. However, the water in such mines is re-circulated and only the excess water is removed from the system. Very insignificant quantity of clayey sludge from effluent settling is produced which is filled in low lying lands.
4.7	Construction or demolition wastes	Yes	Solid waste will be generated from demolition of residential quarters, service buildings and infrastructure after mine closure. The waste so generated will be used for filling low lying areas or old quarry voids.
4.8	Redundant machinery or equipment	Yes	Old equipment and machinery will become redundant during mine-life and will be surveyed off and sold as scrap.
4.9	Contaminated soils or other materials	Yes	Contamination of soil is possible due to inadvertent spillage of oils and improper storage of redundant machinery and equipment. Hydraulic fluids / oils are used in HEMM for their operation. Due to occasional bursting of hoses and leakages, hydraulic fuel gets spilled on the ground. The spilled hydraulic fluids is likely to percolate into the soil and get washed away by rains, thus contaminating a larger area of soil. Necessary control measures like preventive maintenance, scraping off the oil – soaked soil from the place of spillage are taken to prevent soil contamination.
4.10	Agricultural wastes	No	
4.11	Other solid wastes	No	

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	Diesel is burnt for coal transportation and operation of HEMM which releases SO_2 and NOx.
5.2	Emissions from production processes	Yes	Dust is produced in OC patches during drilling and blasting and during movement of HEMM and loaded trucks. Wet drilling is being practised in the OC operations. In

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
			underground mines, dust produced in the production process does not affect the ambient air quality above ground significantly as most of it settles in the underground. The emissions at surface are from CHP and coal transportation.
5.3	Emissions from materials handling including storage or transport	Yes	Handling & transportation of coal; loading and unloading of coal.
5.4	Emissions from construction activities including plant and equipment	No	
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	No	
5.6	Emissions from incineration of waste	No	
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	
5.8	Emissions from any other sources	No	

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	In the underground mines, noise is generated during operation of ventilation fan, winding engine and mini CHP. Ground vibration is not appreciable at surface in case of underground mines due to high working depth. Controlled blasting is practiced in OC patches. Ambient noise levels beyond 100m from the CHP and coal transport route is not likely to exceed the permissible limit of 55 dB(A) during day-time and 45 dB(A) during night-time. No coal transportation during night time.
6.2	From industrial or similar processes	Yes	Movement of dumpers
6.3	From construction or demolition	No	No such activity will take place before mine closure.
6.4	From blasting or piling	No	Not appreciable in case of UG mines.
6.5	From construction or operational traffic	Yes	Noise will be generated from coal and sand transportation in underground mines and movement of pay-loaders at Railway Siding.
6.6	From lighting or cooling	No	Not applicable

	systems		
6.7	From any other sources	No	Not applicable

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	
7.3	By deposition of pollutants emitted to air into the land or into water	No	
7.4	From any other sources	No	
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment:

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	Yes	Storage, transportation & handling of explosive and POL may lead to explosions, spillages, fires etc. Safety measures stipulated by DGMS are followed.
8.2	From any other causes	Yes	1) Roof fall 2) Mine inundation 3) UG Coal Blasting 4) Explosion 5) Fire Safety measures stipulated by DGMS are followed.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	The cluster does not fall under seismically active zone or land slide prone area. Due safety measures are taken to prevent inundation. The mines are well equipped to deal with eventualities as enumerated in CMR 1957 and related DGMS circulars.

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality:

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting facilities, ancillary development or development stimulated by the project which could have	Yes	Socio-economic growth in the block is closely associated with mining activity. Mining supports development of ancillaries and other

	impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) • housing development • extractive industries • supply industries • other		related activities.
9.2	Lead to after-use of the site, which could have an impact on the environment	No	
9.3	Set a precedent for later developments	Yes	The mine infrastructure may be used in future by other projects after exhaustion of the reserves in these mines. Socio-economic benefits of the mines accrue to local population. As such, the likelihood of precedence for later developments cannot be ruled out.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	Yes	As coal occurs in continuous layers over large distances, associated mining activity in future with numerous closely located centres along with other activities like power generation etc cannot be ruled out. This could lead to cumulative impact on environment.

(III) Environmental Sensitivity

S. No.	Areas	Name / Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	None	Not applicable
2	Areas which are important or sensitive for ecological reasons -Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	None	Not applicable
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	None	Not applicable
4	Inland, coastal, marine or underground waters	None	Not applicable
5	State, National boundaries	None	Not applicable
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	None	Not applicable
7	Defence installations	None	Not applicable
8	Densely populated or built-up area	Yes	Densely populated areas lie within the leasehold properties of the mines. As such, adequate sand

			stowing to prevent subsidence is a regular activity in mines where depillaring is being done. Due to unscientific slaughter mining practiced by the private mines before nationalization, a number of unstable localities measuring about 29.85 Ha have developed. Total affected population residing in these areas is about 8500 and are to be rehabilitated as per Masterplan for RCF.
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Yes	Hospital, schools, places of worship & community facilities catering to the needs of local population exist within the cluster.
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	None	Not applicable
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	None	Not applicable
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	None	Not applicable

I hereby give the undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any, to the project will be revoked at our risk and cost.

Date:
Place:

General Manager
ENVIRONMENT DEPARTMENT
Eastern Coalfields Ltd.
08.06.16

B. N. Prasad
General Manager (Environment)
Eastern Coalfields Limited
PO-Sitarampur, District-Burdwan, West Bengal
PIN: 713359
(Project proponent)
Signature of the applicant with
full name, official seal & address