FORM - 1

(I) Basic Information

1	Name of the project	Cluster No. 9 of M/s Eastern Coalfields Ltd.
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 : 12 (Twelve) Coal Production Capacity : 8.00 MTY Cluster Area (Leasehold) : 7145.40 Ha
4	New / Expansion / Modernization	This is an amendment proposal to the earlier granted EC vide letter no. J-11015/38/2011-I(A).II(M) Dated 23.01.2015 **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 while keeping the overall cluster capacity and area unchanged. This re-assessment / rationalization has been done based on present condition and capability of the mines for achieving optimum production levels. The changes will be in line with the revised mining plan for the cluster, duly approved by the Board of Directors in ECL on 31.08.2016. The changes with reference to the approved EC have been shown in the following table –

Sl No.	As per Existing EC					Amendment sought as per Revised Mine Plan		
	Name of the Mine	Lease Area (Ha)	Normative Production Capacity (MTY)	Peak Production Capacity (MTY)	Mine Life (Years)	Proposed Amendment / New Proposal	Peak Production Capacity (MTY)	Mine Life (Years)
1	Ratibati UG	249	0.09	0.12	> 40	Capacity reduced	0.04	> 40
2	Chapuikhas UG	412	0.05	0.06	> 50	No change	0.06	> 50
	Chapuikhas OC Patch (7 Ha)		0.15	0.15	1		0.15	1
3	Amritnagar UG	279	1.14	1.14	> 30	Capacity reduced	0.60	> 50
4	Tirat UG	214.5	0.06	0.08	> 10	Mines merged.	0.15	> 10
5	Kuardih UG	615	0.05	0.07	> 10			
	Kuardih OC Patch (20 Ha)		0.30	0.40	2	Capacity reduced	0.25	2
6	Nimcha UG	890.2	0.31	0.40	> 50	Capacity enhanced	0.58	> 40
						Nimcha Highwall (New)	0.50	5
	Damalia OC Patch (5 Ha)		0.40	0.40	1	No change	0.40	1
						Nimcha (Amkola) OC Patch (20.1 Ha) (New)	0.25	3
7	Ghusick UG	376	0.05	0.10	> 50	Merged with New Ghusick UG and Muslia UG & OC (280 Ha)	1.93	> 25
8	Kalipahari UG	299.5	0.05	0.10	> 50	No change	0.10	> 50
	Kalipahari OC Patch A (24 Ha)		0.16	0.22	2	Capacity reduced	0.30	Sequential operation for 4 years
	Kalipahari OC Patch B (20 Ha)		0.15	0.20	2			

	Kalipahari OC Patch C (10 Ha)		0.15	0.15	1			
	Kalipahari OC Patch D (10 Ha)		0.15	0.15	1			
9	Muslia UG	948	0.04	0.05	> 50	Merged with mine at Sl. No. 7.		
	Muslia OC Patch (140 Ha)		0.40	0.55	5			
10	New Ghusick UG	224	0.04	0.05	> 40	Merged with mine at Sl. No. 7		
11	Jemehari UG	118	0.03	0.04	> 10	No change	0.04	> 10
12	J K Nagar UG	1237	0.35	0.87	> 30	Capacity reduced	0.20	> 50
	J K Nagar OC Patch (21 Ha)		0.30	0.40	3	No change	0.40	3
	Pure Searsole OC Patch (8 Ha)		0.12	0.12	1		0.12	1
	Mallick Basti OC Patch (8 Ha)		0.26	0.26	1		0.26	1
13	Damra UG	249	0.04	0.06	> 10	Capacity reduced	0.05	> 10
14	Mahabir UG	241.2	0.02	0.03	> 25	No change	0.03	> 25
	Mahabir OC (26 Ha)		0.20	0.40	4	Capacity reduced	0.30	3
	Narainkuri OC Patch (60 Ha)		0.40	0.55	4	Capacity reduced	0.40	4
	Egara OC Patch (19 Ha)		0.25	0.35	5	No change	0.35	5
15	Narainkuri UGP	793	0.54	0.54	> 25	No change	0.54	> 25
	Total	**7145.40**	**6.25**	**8.00**		**No overall change in area and capacity**	**8.00**	

Note: Area of OC patches shown in brackets. After amalgamation / merger of some mines, total no. of mines will stand reduced to 12

5	Existing Capacity/Area etc	Existing EC capacity is 8.00 MTY and Cluster area is 7145.40 Ha. Approved vide EC letter no. J – 11015/38/2011 – IA – II (M) dated 23-01-2015.
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.
Radha Madhabpur	Chelode Damra	5 40	Raniganj Asansol	Burdwan Burdwan
C.M.Ghusick	Ghusick	39	Asansol	
G.M.Ghusick	Ghusick Damra	39 40	Asansol	Burdwan
Kalipahari	Kalipahari Ghusick	36 39	Asansol Asansol	Burdwan
Devolia & West Devolia	Ghusick	39	Asansol	Burdwan
Bhutdoba	Kalipahari	36	Asansol	Burdwan
Choiwrasia	Kalipahari Ghusick	36 39	Asansol Asansol	Burdwan
Damra	Damra Chelode	40 5	Asansol Raniganj	Burdwan
New Ghusick	Mohisila Asansol	25 23	Asansol Asansol	Burdwan
Muslia	Mohisila Kotaldih Damra Ghusick	25 38 40 39	Asansol Asansol Asansol Asansol	Burdwan
Damra	Kotaldih Damra	25 23	Asansol Asansol	Burdwan
Sripur 4,5 & 6 pits	Ningah Nischinta Saora	28 32 1	Jamuria Asansol Raniganj	Burdwan
Rana No. 6 Pit	Ningah Nischinta Sripur	28 32 24	Jamuria Asansol Jamuria	Burdwan
Sripur Incline	Khuskhulla Chanda Saora	27 29 28 1	Jamuria Jamuria Asansol	Burdwan
Chak Keshabganj	Keshabganj	33	Asansol	Burdwan
N Mohisila	Asansol	35	Asansol	Burdwan
K Chalbalpur (P)	Chalbalpur Belebathan	7 9	Raniganj	Burdwan
Chalbalpur	Chalbalpur Belebathan Jemehari Chapui	7 9 8 3		
Chapuikhas	Chapui Kuardih Chalbalpur Chelod Seora	3 4 7 5 1		
Ratibati	Ratibati Seora Chapui	2 1 3		
Kuardi	Chelod Kuardih	5 4	Raniganj	Burdwan
East Nimcha (P)	Tirat	6		
Khas Chalbalpur (P)	Chalbalpur	7		
E Nimcha	Tirat	6	Raniganj	Burdwan

		(P)	Damalia Amkola Murgathole Harbhanga	11 14 15 10		
		Jemehari	18. Modern Satgram	134	Satgram Jemihari	Burdwan
			19. North Brook	112	Jemihari Satgram Benali	Burdwan
			20. East Jamehari (P)/ Jemehari	150/ 261	Searsole Nimcha Jemehari	Burdwan
			21. Pure Searsole	131	Searsole	Burdwan
		J.K.Nagar	23. J. K. Nagar	200	Jemehari Belbathan Nimcha	Burdwan
			24. East Jemehari (P)	111/ 261	Nimcha	Burdwan
			25. Jemehari Khas East.	48	Jemehari Belbathan	Burdwan
			26. Jemehari Sel.	14	Nimcha	Burdwan
			27. Nimcha (P)	94/ 200	Belbathan Nimcha	Burdwan
			28. Damoda (P)	38/185	Searsole	Burdwan

	Village	Details given at Sl. No. 9
	Tehsil	
	District	Burdwan
	State	West Bengal
10	Nearest railway station / airport along with distance in kms.	The centre of the cluster is situated at a distance of 10 Km east of Asansol Railway station. Nearest airport is at Andal situated 40 kms away. Other airports are Kolkata and Ranchi, each situated 200 kms away
11	Nearest Town, city, District Headquarters along with distance in kms.	Centre of the cluster is located 10 km east of Asansol. District Headquarters is at Burdwan about 100 kms away.
12	Village Panchayats Zilla Parishad Municipal Corporation, Local body (complete postal Addresses with telephone nos. to be oiven)	Details given at Sl. No. 9
13	Name of the applicant	Eastern Coalfields Ltd.
14	Registered Address	Sanctoria PO : Dishergarh, Dist: Burdwan, West Bengal PIN-713333
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.	0341-2254510
	Fax No.	0341-2254510
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.)

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data

<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>Details are given below-
<table>
<tr><th rowspan="2">Sl.</th><th rowspan="2">Type Land Use</th><th colspan="3">Land Use in Ha</th><th rowspan="2">Remarks</th></tr>
<tr><th>Present</th><th>During Mining</th><th>Post-mining</th></tr>
<tr><td rowspan="3">1</td><td>Running quarry</td><td>35.00</td><td>408.60</td><td></td><td></td></tr>
<tr><td>Backfilled</td><td>11.00</td><td></td><td></td><td>408.60 brought under Plantation</td></tr>
<tr><td>Not Backfilled</td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="3">2</td><td>Abandoned quarries / voids</td><td>113.25</td><td>113.25</td><td></td><td></td></tr>
<tr><td>Backfilled</td><td>-</td><td>80.25</td><td></td><td>80.25 brought under Plantation</td></tr>
<tr><td>Not Backfilled</td><td>113.25</td><td>33</td><td>33</td><td>Water body</td></tr>
<tr><td>3</td><td>External OB dump</td><td>57.12</td><td>160.21</td><td>53.11</td><td>53.11 Ha of ext. dump under plantation. Balance OB re-handled and 107.10 Ha free area under plantation</td></tr>
<tr><td>4</td><td>Service building/mine infra</td><td>352.14</td><td>360</td><td>300</td><td>300.00 (undisturbed) + 60 ha under plantation</td></tr>
<tr><td>5</td><td>Coal dump</td><td>30</td><td>40</td><td></td><td>40.0 brought under Plantation</td></tr>
<tr><td>6</td><td>Rail & Road</td><td>148.62</td><td>148.62</td><td>128.62</td><td>20 Ha under plantation)</td></tr>
<tr><td>7</td><td>Habitation (total)</td><td rowspan="2">733.2</td><td>614.83</td><td>614.83</td><td>Undisturbed</td></tr>
<tr><td></td><td>Unstable habitations</td><td>118.37 Rehabilitated outside cluster</td><td></td><td>Free area of 118.37 Ha under Plantation</td></tr>
<tr><td>8</td><td>Other built-up areas</td><td>300.23</td><td>300.23</td><td>300.23</td><td>Undisturbed</td></tr>
<tr><td>9</td><td>Subsided land</td><td>240.11</td><td>690.11</td><td></td><td>690.11 To be brought under Plantation</td></tr>
<tr><td>10</td><td>Agriculture land</td><td>3246.76</td><td>2800.76</td><td>2800.76</td><td>Undisturbed</td></tr>
<tr><td>11</td><td>Forest land</td><td></td><td>-</td><td></td><td>-</td></tr>
<tr><td rowspan="2">12</td><td rowspan="2">Plantation / Natural Vegetation</td><td>200</td><td>200</td><td rowspan="2">2582.38</td><td rowspan="2">Plantation/Natural vegetation</td></tr>
<tr><td>421.5</td><td>421.5</td></tr>
<tr><td>13</td><td>River/nallah/pond</td><td>246.47</td><td>246.47</td><td>246.47</td><td>Undisturbed</td></tr>
<tr><td>14</td><td>Barren land</td><td>935</td><td>436.45</td><td></td><td>436.45 To be brought under Plantation</td></tr>
<tr><td>15</td><td>Vacant land for public purposes</td><td>86</td><td>86</td><td>86</td><td>Undisturbed</td></tr>
<tr><td></td><td>Total</td><td>7145.4</td><td>7145.4</td><td>7145.4</td><td></td></tr>
</table>
Source: Approved Mining Plan including Mine Closure Plan</td></tr>
<tr><td>1.2</td><td>Clearance of existing</td><td>Yes</td><td>Land will be broken up during opencast mining leading to clearance</td></tr>
</table>

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
	land, vegetation and buildings?		of existing vegetation and habitations.
1.3	Creation of new land uses?	Yes	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.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	No	Geological Block has already been explored by GSI, CMPDI, ECL & MECL. No further investigation is required.
1.5	Construction works?	Yes	Infrastructure is required for the proposed Narainkuri UGP for which land is to be acquired. One no. of CHP is proposed for Narainkuri UGP.
1.6	Demolition works?	Yes	Demolition of some buildings may be required for mining.
1.7	Temporary sites used for construction works or housing of construction workers?	Yes	Temporary sites for construction works will be created during creation of new infrastructure for Narainkuri UGP and at other locations where required.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Excavation works due to opencast mining.
1.9	Underground works including mining or tunneling?	Yes	Underground mining by Bord & Pillar method of mining with caving and highwall method of mining.
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 of 8.00 MTY. Present production from the cluster is 1.42 MTY (2015 – 16).
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 mine is allowed to settle in settling tanks. Most of this water is reused for dust suppression and stowing and part of it is also used for domestic use. Industrial Waste Water: Waste water generated from the workshop and HEMM washing is routed through Oil & Grease traps and discharged after settling of suspended particulates. Domestic Waste Water: Domestic waste water generated is routed to soak-pits.

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<tr><td></td><td></td><td></td><td>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.</td></tr>
<tr><td>1.16</td><td>Facilities for long term housing of operational workers?</td><td>Yes</td><td>Adequate housing facilities for workers have already been provided at all the existing mines. No further residential quarters are needed except at proposed Narainkuri UGP.</td></tr>
<tr><td>1.17</td><td>New road, rail or sea traffic during construction or operation?</td><td>No</td><td></td></tr>
<tr><td>1.18</td><td>New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?</td><td>No</td><td></td></tr>
<tr><td>1.19</td><td>Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?</td><td>No</td><td></td></tr>
<tr><td>1.20</td><td>New or diverted transmission lines or pipelines?</td><td>No</td><td></td></tr>
<tr><td>1.21</td><td>Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?</td><td>No</td><td></td></tr>
<tr><td>1.22</td><td>Stream crossings?</td><td>Yes</td><td>Nunia Nallah flows through the Cluster and finally drains into Damodar River flowing along the southern boundary of the cluster.</td></tr>
<tr><td>1.23</td><td>Abstraction or transfers of water from ground or surface waters?</td><td>Yes</td><td>Water accumulating in the mines is continuously pumped out. The quantity of pumping varies from mine to mine which is given below:
<table>
<tr><th>Name of colliery</th><th>Peak Discharge of mine water (KLD)</th><th>Domestic water supply (KLD)</th><th>Industrial water supply (KLD)</th></tr>
<tr><td>Ratibati UG</td><td>1060</td><td>425</td><td>46</td></tr>
<tr><td>Chapuikhas UG and OC OC</td><td>870</td><td>366</td><td>156</td></tr>
<tr><td>Amritnagar UG</td><td>1390</td><td>897</td><td>205</td></tr>
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<tr><td>Ghusick group of Mines</td><td>3770</td><td>1121</td><td>369</td></tr>
<tr><td>Kalipahari UG and OC</td><td>1100</td><td>518</td><td>497</td></tr>
<tr><td>Jemehari UG</td><td>780</td><td>245</td><td>42</td></tr>
<tr><td>J K Nagar UG and OC</td><td>1500</td><td>897</td><td>347</td></tr>
<tr><td>Damra UG</td><td>0</td><td>245</td><td>26</td></tr>
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<tr><td>Proposed Narainkuri UG</td><td>3670</td><td>800</td><td>1029</td></tr>
<tr><td>Total</td><td>18660</td><td>8126</td><td>4255</td></tr>
</table>
*Additional abstraction from one proposed OC patch will be around 500 KLD.

No surface water is needed for mining process.</td></tr>
<tr><td>1.24</td><td>Changes in water bodies or the land surface affecting drainage or run-off?</td><td>No</td><td>_</td></tr>
<tr><td>1.25</td><td>Transport of personnel or materials for construction, operation or decommissioning?</td><td>Yes</td><td>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 and further transportation to consumers is also made by Railway.</td></tr>
<tr><td>1.26</td><td>Long-term dismantling or decommissioning or restoration works?</td><td>Yes</td><td>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. Backfilling of voids created due to opencast mining as well as that of the abandoned voids will be carried out and such land will be biologically reclaimed / eco-restored.</td></tr>
<tr><td>1.27</td><td>Ongoing activity during decommissioning which could have an impact on the environment?</td><td>Yes</td><td>Backfilling and re-handling of OB will generate dust which may impact air environment. Dismantling of infrastructure will also cause air and noise pollution for a brief period.</td></tr>
<tr><td>1.28</td><td>Influx of people to an area in either temporarily or permanently?</td><td>Yes</td><td>Influx of people has taken place due to direct and indirect employment opportunities.</td></tr>
<tr><td>1.29</td><td>Introduction of alien species?</td><td>No</td><td></td></tr>
<tr><td>1.30</td><td>Loss of native species or genetic diversity?</td><td>No</td><td></td></tr>
<tr><td>1.31</td><td>Any other actions?</td><td>No</td><td></td></tr>
</table>

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>Mostly undeveloped will be required for opencast mines as well as underground mining in conjunction with caving operation proposed in the cluster. Details given in Sl. No. 1.1.</td></tr>
<tr><td>2.2</td><td>Water (expected source & competing users) unit: KLD</td><td>Yes</td><td>The mine water discharged from the mines is the chief source of water in the area and caters to the requirement of the entire community residing near the mines. There are no competing users of mine water.
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</table></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 Damodar river flowing along the southern boundary of the cluster.</td></tr>
<tr><td>2.4</td><td>Construction material , stone, aggregates and soil (expected source – MT)</td><td>Yes</td><td>Construction materials will be required to set up infrastructure facilities and CHP in the proposed Narainkuri UG project and augmentation of existing facilities in mines.</td></tr>
<tr><td>2.5</td><td>Forests and timber (source – MT)</td><td>Yes</td><td>Some timber is required for laying of underground tracks and for roof support in underground mines and is obtained from the forest department.</td></tr>
<tr><td>2.6</td><td>Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)</td><td>Yes</td><td>Electricity Supply from Dishergarh Power Supply & WBSEB.

Fuel Requirement : Diesel is used for operating the dumpers and trucks.</td></tr>
<tr><td>2.7</td><td>Any other natural resources (use</td><td>No</td><td></td></tr>
</table>

S.No.	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
	appropriate standard units)		

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**: Total OB generated from the 15 OC patches within the cluster will be around 86.34 Mm^3, major portion of which would be backfilled after exhaustion of these patches. **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.
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 disposed off in suitable manner.
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	No	
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 NO_x.
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 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	No	

S.No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
	materials, sewage and waste		
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
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 CHP. Ground vibration is not appreciable at surface in case of underground mines due to high working depth. 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.
6.2	From industrial or similar processes	Yes	Movement of HEMM.
6.3	From construction or demolition	Yes	Construction activities are proposed in Narainkuri UG. Demolition of some buildings may be required for mining.
6.4	From blasting or piling	Yes	Not applicable in case of UG mines. There will be noise and vibration during blasting in opencast mines.
6.5	From construction or operational traffic	Yes	Noise will be generated from coal and sand transportation.
6.6	From lighting or cooling systems	No	Not applicable
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) Blasting 4) Explosion 5) Fire 6) Operation of HEMM and automobiles 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. There is no history of floods. 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 impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) • housing development • extractive industries • supply industries	Yes	Socio-economic growth in the block is highly associated with mining activity. Mining supports development of ancillaries and other related activities.

	• other		
9.2	Lead to after-use of the site, which could have an impact on the environment	Yes	After cessation of mining, the mined out areas will be reclaimed and ecologically restored by planting diverse species of trees. This will have a positive impact on the environment.
9.3	Set a precedent for later developments	No	
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	Yes	Raniganj Coalfields is an Industrial belt with other existing industries like Thermal Power Plant, Steel Plant etc. which 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	Defense 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. 28 unstable localities are present within the cluster affecting a total population of about 34000 and total area of 118 Ha. As per Masterplan of Raniganj coalfields, this population is to be shifted to alternate sites on non-coal bearing areas already identified for the purpose. This work will be carried out by Asansol Durgapur Development Authority.
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,	None	Not applicable

	tourism, minerals)		
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

Date: 03.09.2016
Place: ASANSOL

महाप्रबंधक/ General Manager
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Signature of the applicant with
full name, official seal & address