HALF YEARLY

ENVIRONMENT CLEARANCE COMPLIANCE REPORT

OF

CLUSTER 7

J-11015/386/2010-IA.II(M)

FOR THE PERIOD OF

APRIL 2018 TO SEPTEMBER 2018

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

EASTERN COALFIELDS LIMITED
(A Subsidiary of Coal India Limited)
Office of the Agent, Bhanora Group of Mines, Sripur Area
P.O Barabani, PIN: 713334, Dist. Burdwan (WB)

UNDERTAKING

Information provided in Half Yearly EC Compliance report for the period April, 2018 to September, 2018 in respect of the following mines in Cluster No. 7 is true to the best of my knowledge:

Sl No.	Name of the mine	Name of the Manager	Signature of the Manager
1	Bhanora West UG	Shri A.K.Banerjee	01/11/18
	Bhanora West OCP		

01/11/2018

Agent/Project Proponent
Bhanora Group of Mines
(Signature with Seal)

Bhanora Agent Girimint Colliery SRIPUR AREA, ECL

ईस्टर्न कोलफील्ड्स लिमिटेड

(कोल इंडिया लिमिटेड का एक अंग)

EASTERN COALFIELDS LIMITED

(A subsidiary of Coal India Limited)

OFFICE OF THE AGENT, BARMONDIA GROUP OF MINES, SALANPUR AREA

UNDERTAKING

Information provided in half yearly EC compliance report for the period April 2018 to September 2018 in respect of the following mines of Cluster no. 7 is true to the best of my knowledge:

SL NO.	NAME OF MINES	NAME OF THE MANAGER	SIGNATURE OF THE MANAGER
1	Barmondia UG	A.L. ANSARI	30/X/18
2	Chakballavpur UG	A.L. ANSARI	30/X/18
3	Manoharbahal UG	A.L. ANSARI	30/X/18

31.10.18

Agent/ Project Proponent
Barmondia group of Mines
(SIGNATURE WITH SEAL)

DY. G. M. (M) / AGENT
BARMONDIA (A) COLLIERY
SALANPUR AREA (E.C.L.)
उप महा प्रबंधक (खनन) / अभिकर्ता
बरमोन्डिया (ए) कोलियरी
सलानपुर क्षेत्र (ई.सी.एल.)

Name of the Project: Cluster No.7

Clearance letter No: J-11015/386/2010-IA-II.(M)

Period of Compliance Report: April, 2018- September, 2018

Specific Conditions:

<table>
<tr><th>Sl No.</th><th>Conditions</th><th>Compliance Status</th></tr>
<tr><td>i.</td><td>The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.</td><td><u>Complied</u>
<table>
<tr><th><u>Mines</u></th><th><u>Peak EC Capacity (MTPA)</u></th><th><u>Production Apr’18 to Sep’ 18)</u></th></tr>
<tr><td>Barmondia UG</td><td>0.030</td><td>0</td></tr>
<tr><td>Chakballavpur UG</td><td>0.040</td><td>0</td></tr>
<tr><td>Manoharbahal UG</td><td>0.040</td><td>0</td></tr>
<tr><td>Bhanora West UG</td><td>0.13</td><td>0.013684</td></tr>
<tr><td>Bhanora West OCP</td><td>0.50</td><td>0.170603</td></tr>
</table></td></tr>
<tr><td>ii.</td><td>The validity of the EC is for the life of the Mine or as specified in the EIA Notification, 2006, whichever is earlier.</td><td>Agreed</td></tr>
<tr><td>iii.</td><td>All safety measures shall be taken as per CMR, 1957 & related circulars.</td><td>All safety measures are being taken as per CMR-1957 & related Circulars.</td></tr>
<tr><td>iv.</td><td>The production shall be within the same Mining Lease area.</td><td>The production is within the same Mining lease</td></tr>
<tr><td>v.</td><td>Coal shall be transported by rail only. Coal transportation from mine to siding should be by conveyor belt. The loading to siding by pay loaders into railway wagons.</td><td>Coal transportation is done by rail. Transportation of coal from mine is being done by tarpaulin covered trucks on dedicated black-topped road especially constructed for the purpose. Coal transportation from mines to siding through belt conveyors is not feasible because, the capacity of the mines is less.</td></tr>
<tr><td>vi.</td><td>Independent network of railway siding inside cluster be developed. Railway sidings should be constructed at the earliest and till then proponent may use mechanically covered trucks for transportation of coal.</td><td>Transportation of coal from mine to railway siding is being done by tarpaulin covered trucks. Presently MS railway siding is used for coal despatch under this Cluster. Renovation of Bhanora Railway Siding is under process for Sripur Area.</td></tr>
<tr><td>vii.</td><td>Three tier green belts shall be raised around the railway sidings and along the road sides to prevent dust and noise pollution</td><td>A healthy natural plantation is already present around the siding to prevent dust and noise pollution and no further plantation is possible due to non-availability of space at the siding. In addition to this MS siding is bounded by a thick brick wall of 10 feet height approx.</td></tr>
<tr><td>viii.</td><td>Stowing and depillaring shall be as per recommendation of the DGMS.</td><td>Agreed.</td></tr>
</table>

ix.	The proponent must comply with the Raniganj Action Plan. The unstable areas within the cluster will be brought under plantation after the population residing over these areas is rehabilitated under the Master plan for Raniganj Coalfield to be implemented by ADDA.	Complied as per Master Plan for Raniganj Coalfield implemented by ADDA, Govt. of West Bengal.
x.	Trees with deep rooted system should be planted so as to prevent soil erosion.	Noted and agreed
xi.	Proponent should plant additional 10 Ha/year over the next 10 years at various locations in this Cluster.	Noted and Agreed. Plantation has already been done as per the practice of normal plantation. Depending upon the availability of land further plantation will be done.
xii.	River/nallahs shall be desilted and restored back to functional state.	Garland drains and Catch drains and siltation sump of appropriate size has been constructed to arrest silt and sediment flows from soil, OB dump. The water so collected in the main sump within the mine is utilized for dust suppression in mine Area, roads and green belt development. Garland drains and catch drains are regularly desilted and maintained properly. No discharge is done in river/nallah.
xiii.	Wildlife conservation plan be prepared and submitted to the MoEF & CC with the approval of the State Govt.	Wildlife Conservation plan of entire Raniganj Coalfield has been prepared and sent to Addl. PCCF (Wildlife), Govt. of West Bengal for approval.
xiv.	Proponent shall use high resolution image of all clusters for evaluating land use, plantation etc.	CMPDI has been assigned the task of regularly conducting satellite surveillance study of projects of ECL.
xv.	Separate Drainage Pattern be provided.	Drains are present wherever necessary.
xvi.	Sand stowing must be used as recommended by CMPDI.	Sand stowing is done as per recommendation made by CMPDI.
xvii.	Action plan for prevention and mitigation of subsidence be prepared and implemented.	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 all mines. The mining method adopted in consultation with DGMS and their approval.
xviii.	The OC patches to be operated will be completely filled-up after exhaustion of reserves and reclaimed with plantation.	The OC Patches is presently in operation which will be completely filled-up after exhaustion of reserves and reclaimed with plantation.
xix.	The OB shall be completely re-handled at the end of the mining.	Noted and agreed
xx.	There shall be no residual OB dump after the mining.	Noted and agreed
xxi.	After completion of mining activities, the subsided areas shall be graded and planted upon.	Noted and agreed
xxii.	Coal Extraction shall also be optimized in the areas where agricultural production 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.	Coal Extraction is being carried out as per DGMS permissions and guidelines
xxiii.	The rehabilitation of households falling within this cluster to be carried out in two phases within 10 years.	It is being done in coordination with ADDA (Asansol Durgapur Development Authority)

xxiv.	The land excavated after mining must be brought back to original condition for agricultural/plantation purpose.	Noted and Agreed. All the above mentioned mines except Bhanora West Block OCP of this cluster are UG mines. Hence quality of surface conditions would not be disturbed.
xxv.	Water discharged from the mine should be as good as surface drinking water.	Mine discharge is being monitored regularly by CMPDIL and found well within prescribed limits of MoEF Schedule VI. A Pressure Filter of 5000 GPH is installed at Bhanora Colliery under Sripur Area for treating mine water discharge. However the quantum of mine water if used for drinking purposes will be treated as per the drinking water standards.
xxvi.	Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings) shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.	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.
xxvii.	If subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement of the landowners.	Noted and agreed
xxviii.	Water sprinkling system shall be provided to check fugitive emissions from loading operations, conveyor systems, haulage roads, transfer points, etc. Major approach roads shall be blacktopped and properly maintained.	Sprinkling is done on regular basis to check the fugitive emissions at necessary points.
xxix.	The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation.	As per the revised CSR policy of Coal India Ltd, 2% of the average profit of preceding 3 years is the norms for CSR expenditure in the entire ECL command areas.
xxx.	The mining in the existing mines should be phased out after expiry of the current mining lease and after reclamation of mined over area. The operating mines may be analysed and monitored for compliance of conditions, bearing with movement of wildlife and until such time they are closed/phased out.	It shall be complied as per the Mine Closure Plan (MCP).
xxxi.	Everybody in the core should be provided with mask for protection against fugitive dust emissions.	Dust mask for protection against fugitive dust emissions is provided to the personnel working in the mining area.
xxxii.	Dust mask to be provided to everyone working in the mining area.	Dust mask for protection against fugitive dust emissions is provided to everyone working in the mining area.
xxxiii.	The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area.	Supervision is being done regularly to ensure wearing of dust mask near dust producing sources.
xxxiv.	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.	Periodic Medical Examination (PME) tests which includes PFT were conducted by Area Medical Officer and Initial Medical Examination (IME) is being done for new recruits.
xxxv.	The mining area should be surrounded by green belt having thick closed canopy of the tree cover.	Mining area is surrounded by green cover and further plantation will be done to increase the

		thickness of the tree cover.
xxxvi.	Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up from 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.	20 % of the workforce is covered under Periodical Medical Examinations each year. Suspected cases of occupational health diseases like Pneumoconiosis and Noise Induced Hearing Loss are sent to higher medical board within company for comprehensive check-up. The PME data is being regularly sent to the DGMS.
xxvii.	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.	Noted and Agreed
xxviii.	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.	Noted and Agreed. All the above mentioned mines except Bhanora West Block OCP of this cluster are UG mines and there is no overflow of OB into the river and into the agricultural fields.
xxxix.	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 and 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.	Above mentioned mines of this cluster except Bhanora West Block OCP are UG mines. At OCP drains are provided at necessary areas which are regularly desilted and cleaned every year before monsoon.
xl.	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 sites. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.	Drains of adequate dimensions have been provided to evacuate maximum single day rainfall. Cleaning of drains is part of monsoon preparedness. Inspection of drains is carried out by safety personnel as part of pre-monsoon activity.
xli.	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.	Noted and agreed
xlii.	Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.	Not Applicable as there is no CHP.
xliii.	Mine discharge water outside the ML shall be monitored, particularly for TDS and treated to conform to prescribed levels before discharge into the natural environment.	Mine water discharge quality complies with prescribed standards. Regular monitoring is done by CMPDIL.
xliv.	Drills shall be wet operated.	Spraying is done for dust suppression before drilling underground.
xlv.	The project authorities shall undertake regular	As per requirement, regular repairing and tarring

	repairing and tarring of roads used for mineral transportation. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads.	of roads are being taken on priority basis. Green belt is been developed comprising of native species like Neem, Mango, Ashoka, Radhachura, Krishnachura, etc trees. Both sides of approach roads is also well vegetated naturally.
xlvi.	Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.	Controlled blasting is in practice with use of delay detonators.
xlvii.	A progressive afforestation plan shall be implemented covering an area of 456 ha at the end of mining, which includes reclaimed Excavation area (50 ha); Built up area (52.1 Ha); Subside area (23.9 ha) and barran/vacant land (330 ha) and in township located outside the lease by planting native species in consultation with local DFO/Agriculture 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.	Most of the area is naturally vegetated and these are not affected due to mining operations. However plantation with native species will be made on availability of land. A green belt alongside of 1.5 km approach road at Bhanora West OCP is developed with native species.
xlviii.	The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.	The restoration and reclamation for degraded areas are done as per Mine Closure Plan (MCP).
xlix.	Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out.	It will be done as per the Mine Closure Plan (MCP)
l.	No groundwater shall be used for mining operations.	No ground water is being used for mining operations.
li.	An estimated total 11.20 Mm^3 of OB will be generated during the entire life of the mine. There shall be no residual external dump left at the mined site after exhaustion of the quarries. The OB dump height is upto 60 m. The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to MoEF& CC and its Regional Office on yearly basis.	Noted and agreed
lii.	Of the total quarry area 50 ha the backfilled quarry area of 50 ha shall be reclaimed with plantation by planting native species in consultation with local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.	Noted and Agreed.
liii.	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 quantity 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 the Ministry of Environment, Forests & Climate Change and to the Central Pollution Control Board quarterly within one month of monitoring.	Regular monitoring of ground water quality and level is being done by CMPDIL, Asansol. The monitoring reports indicate that the quality of the water is meeting the drinking water quality standards. The measurement of water level is being carried out and the water level data shows that there no significant impact on ground water level.
liv.	The company shall put up artificial groundwater	Ground water level monitoring is being done

<table>
<tr><td></td><td>recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.</td><td>regularly by CMPDIL on quarterly basis. Measures will be taken if any decline in water table is reported.</td></tr>
<tr><td>lv.</td><td>Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater.</td><td>In old collieries septic tank followed by soak pits is present. In case of new colonies in the future integrated STP will be constructed. No CHP is present.</td></tr>
<tr><td>lvi.</td><td>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.</td><td>It is being complied as per R&R Policy of CIL/National R&R Policy.</td></tr>
<tr><td>lvii.</td><td>For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1:5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MoEF&CC and its concerned Regional office.</td><td>Changes in the land use pattern will be tracked by carrying out satellite imagery at every three years' interval.
CMPDI, Ranchi is assigned with this task.</td></tr>
<tr><td>lviii.</td><td>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 Environment Clearance.</td><td>Mine closure plan as per guidelines of Ministry of Coal has been prepared and approved by the ECL board in the 264th Board meeting on 24th Sept 2013 and money has been deposited in Escrow account in 9-11-2013.</td></tr>
<tr><td>lix.</td><td>The project authorities 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 life of the mine.</td><td>As per the revised CSR policy of Coal India Ltd. 2% of the average profit of preceding 3 years is the norms for CSR expenditure in the entire ECL command areas. The requirement of Socio Economic is being done by TISS in 2012-13 & accordingly CSR activities are being undertaken in consultation with local panchayats.
SRIPUR AREA
<table>
<tr><th>Financial Year in which Proposal approved</th><th>Name of work approved</th><th>Value of work (in lakhs)</th></tr>
<tr><td>2014-15</td><td>Construction of Toilets and Renovation of Drinking Water arrangements at Harizan Adarsh Vidyalaya, Tinpatia, Sripur</td><td>2.218</td></tr>
<tr><td>2014-15</td><td>Construction of Toilets and Renovation of Drinking Water arrangements at Shishu Vidyalaya, Sripur Colliery</td><td>2.225</td></tr>
</table></td></tr>
</table>

			2014-15	Construction of Toilets and Renovation of Drinking Water arrangements at Prabha Adarsh Vidyalaya, Sripur Colliery	2.344
			2014-15	Construction of Toilets and Renovation of Drinking Water arrangements at Neemia Primary School, Sripur Colliery	2.249
			2014-15	Construction of Toilets and Renovation of Drinking Water arrangements at Adarsh Primary School, 10 No. Muslia	2.32
			2014-15	Construction of Toilets and Renovation of Drinking Water arrangements at Shishu Vikas Vidyalaya Rana Colliery	2.343
			2014-15	Construction of Toilets and Renovation of Drinking Water arrangements at Balika Vidyalaya, Sripur New Centre	2.243
			2016-17	Inter School Essay and Debate competition	0.34
			2016-17	Construction of Laboratory at Sripur Girls High School at Sripur village under Sripur Area.	5.039
			2016-17	Vetting of proposal for construction of bituminous road from kalipahari/cm ghusick bauripara to budhu dhaurah	26.94

		2016-17	Vetting of proposal for construction of bituminous road from sripur village to shibdanga area road under sripur area	25.08
		2016-17	15 nos of Health camp including Mega Health check up Camp	1.806
		2017-18	Construction of two no. of classroom at first floor of Sripur High School	14.38
lx.	Corporate Environment Responsibility:			
(a)	The Company shall have a well laid down Environment Policy approved by the Board of Directors.	Complied		
(b)	The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms / conditions.	Complied		
(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.	The Environment Department is headed by GM (Env) at HQ level and Environment Management Cell (EMC) has been established at Area level which is responsible for looking after the compliances of the EC conditions of all the Clusters present in the area. The head of this EMC reports directly to the GM of the area.		
(d)	To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliance/violations pf environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.	The Environment Audit Cell (EAC) has been established at area level for periodic audit of the Clusters for compliance of the EC conditions and other regulatory compliances. The non-compliances are being reported to the agents of the concerned cluster and also to the GM of the area. A copy of the audit report also being sent to the GM (Env), HQ. If the compliance is not done in the time bound manner then it is further reported to the higher authorities by GM (Env), HQ.		

General Conditions:

SI No.	Conditions	Compliance Status
i.	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forests & Climate Change.	There has been no change in mining technology.
ii.	No change in the calendar plan of production for quantum of mineral coal shall be made.	It is being complied with.
iii.	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM_{10} ,$PM_{2.5}$,SO_2 and NO_x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State	It is being complied with.

	Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.	
iv.	Data on ambient air quality(PM_{10} ,$PM_{2.5}$,SO_2 and NO_x) 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 Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.	Ambient air quality (PM10, PM2.5, SO_2 and NO_X) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data are 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.
v.	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs	Regular Environmental monitoring is being carried out fortnightly basis by CMPDI, Asansol.
vi.	Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	Mine discharge water samples from the mines is collected and tested in laboratory at CMPDI, RI-I, Asansol on quarterly basis. Mine water quality conforms to the standards prescribed under GSR 422(E) dated 19th May 1993 and 31st December 1993.
vii.	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	Coal is transported from mines to nearby Railway Siding in tipplers. This is ensured that coal in tipplers is wet and covered with tarpaulin before leaving the mine to prevent vehicular pollution. HEMMS and other vehicle are maintained properly in the workshops to check vehicular emissions.
viii.	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EPA Rules, 1986.	Monitoring of environmental parameters is carried out on regular basis. Analysis of these parameters is carried out at CMPDIL laboratory having all necessary facilities.
ix.	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training information on safety and health aspects.	Training and awareness programmes are carried out for the personnel working in dusty areas. All personnel working in such areas are provided mask to protect themselves.
x.	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.	20 % of the workforce is covered under Periodical Medical Examinations each year.
xi.	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	A separate Environment Management Cell with qualified personnel has been established at all the Areas of ECL. The cell reports to D(T), P&P of the company through General Manager (Environment & Forests).
xii.	The funds embarked 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	Funds for environmental protection as kept in budget each year is not diverted for other purposes.

	Office.	
xiii.	The project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in 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 & Climate Change at http://envfor.nic.in	All the ECs are published in two local newspapers widely circulated around the project area.
xiv.	A copy of the environment 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.	Complied
xv.	A copy of the environment clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, district Industry sector and Collector's Office/Tehsildar's office for 30 days	Complied
xvi.	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM_{10}, $PM_{2.5}$, SO_2 and NO_x (ambient) and critical sectoral parameters shall also be displayed t the entrance of the project premises and mine office and in corporate office and on company's website.	All the EC letters along with monitoring data and compliance report is uploaded in the company's website which is regularly updated.
xvii.	The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Offices of CPCB and SPCB.	The compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) shall be submitted six monthly to the respective Regional Office of the Ministry, respective Zonal Offices of CPCB and the SPCB.
xviii.	The Regional Office of this Ministry located in the Region shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	It is being complied with.
xix.	The Environmental statement for each financial year ending 31 march in Form-V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&CC by e-mail.	It is being complied with.

ENVIRONMENTAL MONITORING REPORT OF CLUSTER NO. 7

(FOR THE MONTH OF AUGUST, 2018)

(SALANPUR & SRIPUR AREA)

Eastern Coalfields Limited

Regional Institute-1
Asansol (WB)

ENVIRONMENT MONITORING REPORT
FOR
CLUSTER NO. 7

(For the Month of August, 2018)

CONTENTS

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. CMPDI has trained manpower and well equipped laboratory to carry out monitoring, analysis and R&D work in the field of environment.

Reports have prepared for submission to MoEFCC & SPCB and other statutory authorities.

CHAPTER-II

AMBIENT AIR QUALITY MONITORING

2.1 Location of sampling station and their rationale:

2.1.1 Ambient Air Quality Sampling Locations

2.1.2 Industrial Area Monitoring Location

i) Monoharbahal Village (7A1): Industrial Area

The sampler was placed at Agent office of Barmundia Colliery near Monoharbahal Village. This station was selected to assess the ambient air quality of Industrial area in the core zone where mining activities are in progress.

2.1.3 Residential Area Monitoring Location

i) Janardansayer Village (7A5): **Residential Area**

The Air sampler was placed at Janardansayer Village. The station was selected to represent the present ambient air quality status in residential area of buffer zone of Sangramgarh Project.

ii) Raniganj Village (7A6): **Residential Area**.

The sampler was placed in Choti Raniganj Village. This site was selected to assess the present ambient air quality status in residential area of buffer zone of Mohanpur OCP.

iii) Katanidangal Village (7A7): **Residential Area**.

The sampler was placed in Health Centre of Kelajora. This site was selected to assess the present ambient air quality status in residential area of buffer zone of Begunia OCP Project.

2.2 Methodology of sampling and analysis

Parameters chosen for assessment of ambient air quality were Particulate Matter (PM_{10}), Fine Particulate Matter ($PM_{2.5}$), Sulphur Di-oxide (SO_2) and Nitrogen Oxides (NO_x). Respirable Dust Sampler (RDS) & Fine Dust Sampler (FDS) were used for sampling of PM_{10} & gaseous pollutants and $PM_{2.5}$ respectively. The samples were analysed in Environmental Laboratory of 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_{10}):

In Industrial area varies from 80.5 µg/m^3 & in Residential area from 79.4 to 83.5 µg/m^3.

Fine Particulate Matter ($PM_{2.5}$):

In Industrial area from 29.6 µg/m^3 & in Residential area from 28.5 to 31.6 µg/m^3

Sulphur Dioxide (SO_2):

In Industrial area below 10 µg/m^3 & in Residential area below 10 µg/m^3.

Oxides of Nitrogen (NO_x):

In Industrial area varies from 12.1 µg/m^3 & in Residential area from 11.8 to 13.0 µg/m^3.

AMBIENT AIR QUALITY DATA

Name of the Company: **Eastern Coalfield Limited** Year : **2018**

Name of the Project : **Mines of Cluster No. 7** Month. : **August.**

Industrial Area

1st fortnight

Station Code	Station Name	Date of Sampling	Parameters			
			PM_{10}	$PM_{2.5}$	SO_2	NO_x
7A1	Monoharbahal Village	2-Aug-18	80.5	29.6	<10.0	12.1

2nd fortnight

Station Code	Station Name	Date of Sampling	Parameters			
			PM_{10}	$PM_{2.5}$	SO_2	NO_x
7A1	Monoharbahal Village	22-Aug-18	79.6	28.2	<10.0	11.6

Residential Area

1st fortnight

Station Code	Station Name	Date of Sampling	Parameters			
			PM_{10}	$PM_{2.5}$	SO_2	NO_x
7A5	Janardansayer Village	2-Aug-18	80.2	29.2	<10.0	12.0
7A6	Raniganja Village	8-Aug-18	79.4	28.5	<10.0	11.8
7A7	Katanidangal Village	2-Aug-18	83.5	31.6	<10.0	13.0

2nd fortnight

Station Code	Station Name	Date of Sampling	Parameters			
			PM_{10}	$PM_{2.5}$	SO_2	NO_x
7A5	Janardansayer Village	22-Aug-18	79.0	27.8	<10.0	11.5
7A6	Raniganja Village	23-Aug-18	78.6	27.0	<10.0	11.2
7A7	Katanidangal Village	23-Aug-18	83.0	30.2	<10.0	12.7

National Ambient Air Quality Standards (NAAQS)

National Ambient Air Quality Standards (NAAQS) for industrial, residential and rural areas for 24 hours samples:

Pollutant	PM_{10}	$PM_{2.5}$	SO_2	NO_x
Concentration	100.0	60.0	80.0	80.0

- *All values are expressed in microgram per cubic meter.*

CHAPTER – III

WATER QUALITY MONITORING

3.1 Location of sampling sites and their rationale

i) **Bhanora West UG (7MW2)**
This location has been selected to monitor the discharge quality of Mine effluent to natural surface streams

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 annually 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.

. WATER QUALITY DATA
(Effluent Water)

Name of the Company: **Eastern Coalfield Limited** Year : **2018.**

Name of the Project : **Mines of Cluster No. 7** Month: **August.**

Name of the Stations & Code : **1. 7MW2- Bhanora West UG**

First Fortnight data

Sl. No.	Parameters	Sampling station & sampling date	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
		7MW2			
		7-Aug-18			
1	pH	7.76	*5.5 - 9.0*	Electrometric	0.01
2	TSS	30	*100 (Max)*	Gravimetric Method	5.0
3	TDS	754	*Not specified*	Gravimetric Method	1.0
4	Oil & Grease	<2.0	*10 (Max)*	Partition Gravimetric	2.0
5	COD	36	*250 (Max)*	Closed Reflux	4.0

Second Fortnight data

Sl. No.	Parameters	Sampling station & sampling date	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
		7MW2			
		25-Aug-18			
1	pH	7.62	*5.5 - 9.0*	Electrometric	0.01
2	TSS	38	*100 (Max)*	Gravimetric Method	5.0
3	TDS	716	*Not specified*	Gravimetric Method	1.0
4	Oil & Grease	<2.0	*10 (Max)*	Partition Gravimetric	2.0
5	COD	44	*250 (Max)*	Closed Reflux	4.0

All values are expressed in mg/L unless specified.

Well water level for the month of August, 2018

Sl. No.	Station Code	Location of Dug well	Date of measurement	Water level (in Meters) Below Ground Level
1	7GW1	Dugwell at Janardan Sayer village near lalganj Hatia	10-Aug-18	1.90
2	7GW2	Dugwell at Raniganj Chati village near kalimandir	21-Aug-18	1.60
3	7GW3	Dugwell at westside of Kelajora health Centre	21-Aug-18	1.05
4	7GW4	Dugwell at Bhanora village main road side Mahadeb Smritinilay	8-Aug-18	1.70
5	7GW5	Dugwell at Bonbishtupur Majipara near transformer	8-Aug-18	0.60
6	7GW6	Dugwell at Gobindpur village, backside of Biswanath weigh bridge	21-Aug-18	1.45

CHAPTER - IV

NOISE LEVEL QUALITY MONITORING

4.1 Location of sampling sites and their rationale

i) **Chakballavpur UG (7N1)**

Noise level meter was placed in Chakballavpur pit office to assess the noise level in mine site. The noise levels were recorded in the mine area where all mining activities are in progress.

ii) **Bhanora West UG (7N2)**

Noise level meter was placed in Bhanora West pit office to assess the noise level in mine site. The noise levels were recorded in the mine area where all mining activities are in progress.

4.2.1 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.

NOISE LEVEL DATA

Name of the Company: **Eastern Coalfield Limited** Year : **2018.**

Name of the Project **Salanpur & Sripur Area** Month. : **August.**

Name of the Stations & Code : 1. 7N1- Chakballavpur UG 2. 7N2- Bhanora West 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	7N1	Chakballavpur UG	2-Aug-18	8.00 to 9.00	68.2	*75*
2	7N2	Bhanora West UG	2-Aug-18	9.30 to 10.30	67.8	*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