ईस्टर्न कोलफील्ड्स लिमिटेड

(कोल इंडिया लिमिटेड का एक अंग)

EASTERN COALFIELDS LIMITED

(A subsidiary of Coal India Limited)

OFFICE OF THE AGENT, CLUSTER-4 MINES, SALANPUR AREA

UNDERTAKING

Information provided in the Half yearly EC compliance report for the period October 2023 to March 2024 in respect of the following mines of Cluster no.4 is true to the best of my knowledge:

30/5/24

Agent/ Project Proponent
Itapara OC
(SIGNATURE WITH SEAL)

CHIEF MANAGER / AGENT
ITAPARA COLLIERY

30/5/24.

Agent/ Project Proponent
Khoirabad UG & OC/Gaurandih &
Gaurandih Begunia OC
(SIGNATURE WITH SEAL)

Agent
G.B. Colliery
Salanpur Area

EASTERN COALFIELDS LIMITED
HALF YEARLY EC COMPLIANCE REPORT
H/Y ENDING MARCH, 2024
CLUSTER NO.4, SALANPUR AREA
EC NO. J-11015/106/2011-IA-II.(M) dt. 21-07-2015
AMENDED EC NO.11015/106/2011-IA.II(M) dt.31-05-2018

Compliance of environment clearance conditions

<table>
<tr><th>Sl no.</th><th>Specific Conditions</th><th>Compliance status</th></tr>
<tr><td>i.</td><td>Grant of EC is only for the non-forest area. No mining activity will be allowed in the forest area for which the FC is not available as per the following table.
<table>
<tr><th>#</th><th>Name of mine</th><th>Forest Clearance not available (Ha.)</th></tr>
<tr><td>1</td><td>Itapara OCP</td><td>2.98 Ha</td></tr>
</table></td><td>EC letter got amended from MoEF&CC vide letter no: F.No. J-11015/106/2011-IA.II(M) dated 31.05.2018 and Forest land under Itapara OCP has been removed, thereby reducing the leasehold area of Itapara OCP from 1108 Ha to 855.87 Ha.
Hence, FC is not required.</td></tr>
<tr><td>ii.</td><td>The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.</td><td>Agreed.
<table>
<tr><th>Mine</th><th>Peak EC Capacity(MTY)</th><th>2023-24 (MTY)</th></tr>
<tr><td>Gaurandih & G Begunia OC</td><td>4.21</td><td>2.1</td></tr>
<tr><td>Itapara OCP</td><td>3.5</td><td>0.2</td></tr>
<tr><td>Total</td><td>7.71</td><td>2.3</td></tr>
</table></td></tr>
<tr><td>iii.</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>iv</td><td>Deep rooted plants should be planted along the bunds of the agriculture fields.</td><td>Agreed.</td></tr>
<tr><td>v.</td><td>The mining method shall be adopted in consultation with DGMS along with their approval.</td><td>Agreed.</td></tr>
<tr><td>vi.</td><td>Depillaring to be done with sand stowing/ caving with due approval of DGMS.</td><td>No depillaring activity is presently under taken. (At present, no UG mine is operational in this cluster.)</td></tr>
<tr><td>vii.</td><td>No underground mining will be carried out below 45 m of the major roads, railway line that passes through the mines.</td><td>At present, no UG mine is operational in this cluster.</td></tr>
<tr><td>viii.</td><td>Coal pillars shall be left intact vertically below the surface features.</td><td>No depillaring activity is presently under taken. Coal pillars are left intact to protect surface features like H.T. lines, roads, water bodies, etc.</td></tr>
<tr><td>ix.</td><td>Surface vigil to be constantly maintained to notice any ground movement.</td><td>No ground movement/ subsidence has been observed till date.</td></tr>
<tr><td>x.</td><td>The subsided land will be leveled and any surface crack shall be dozed and filled with appropriate soil material.</td><td>Presently there is no subsided area. Subsided areas, if occurring during mine life will be graded and planted upon.</td></tr>
</table>

xi.	The subsided areas will be reclaimed by planting deep rooted trees.	Presently there is no subsided area. Subsided areas, if occurring during mine life will be graded and planted upon.
xii.	Depillaring with caving will only be done in areas which are free from any surface features and this practice shall be strictly followed.	At present there is no UG mine operational under this cluster.
xiii.	Arrangement for silo/ mechanized loading at Itapara, be made. Action on Rly siding construction and CHP, Wagon loading arrangement be taken simultaneously and on priority.	At present, Coal is transported through Covered trucks.
xiv.	All safety measures shall be taken as per CMR, 1957 & related Circulars.	All safety measures will be taken as provided in CMR, 1957 & related circulars.
xv.	The production shall be within the same mining lease area.	The production is within the same mining lease area.
xvi.	The OB shall be completely re-handled at the end of the mining and will be backfilled upto the ground level and covered with about a meter thick top soil and put to use. The land after mining shall be brought back for agriculture process.	The land excavated after mining will be backfilled concurrently, which will be suitably reclaimed at later stage as per provisions of Mine Closure Plan (MCP).
xvii.	Garland drains be provided.	Drains of adequate dimensions will be provided.
xviii.	Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine.	External OB will be stabilized which minimizes the risk of its overflow.
xix.	Coal transportation in pit: Underground mine-coal tubs at the faces are being hauled by Tugger Haulage; Opencast mine-coal at surface is transported to the nearby coal depot by colliery dumpers through tippler, Surface to Siding by dumper.	Transportation of coal is being done with tarpaulin covered trucks.
xx.	Independent network of railway siding inside cluster be developed. Railway sidings should be constructed at the earliest and till then proponent ay use mechanically covered trucks for transportation of coal.	At present coal is sent to Bonjemehari railway siding through tarpaulin covered trucks.
xxi.	Three tier green belts shall be raised around the railway sidings and along the road sides to prevent dust and noise pollution.	Will be complied.

xxii.	Stowing and depillaring shall be as per the recommendations of the DGMS.	There is no plan for stowing and depillaring as there is no UG mining operation at present.
xxiii.	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.	Rehabilitation under the master plan of Raniganj Coalfield will be done by ADDA (Asansol Durgapur Development Authority)
xxiv.	Trees with deep rooted system should be planted so as to prevent soil erosion.	No soil erosion within the mine leasehold area is identified.
xxv.	Proponent should plant additional 10 Ha/ year over the next 10 years at various locations in this Cluster.	Will be complied.
xxvi.	River/nallahs shall be desilted and restored back to functional state.	There is no siltation from mines into river/nallahs. However, cleaning of nallahs is anannual pre-monsoon activity in each mine of ECL.
xxvii.	Wildlife conservation plan be prepared and submitted to the MOEFCC with approval of the state govt.	Wildlife Conservation Plan submitted to DFO, Durgapur, W.B..
xxviii.	Proponent shall use high resolution image of all clusters for evaluating land use, plantation etc.	CMPDI has been assigned with the task of regularly conducting satellite surveillance study of projects of ECL.
xxix.	Separate drainage pattern be provided.	Drains are provided wherever necessary.
xxx.	Sand stowing must be used as recommended by CMPDI.	Presently there is no depillaring activity is going on. Hence, no sand stowing is required.
xxxi.	Action plan for prevention and mitigation of subsidence be prepared and implemented.	No depillaring activity (caving/stowing) is being done; there is no subsidence at present.
xxxii.	The OC patches to be prepared will be operated completely filled-up after exhaustion of reserves and reclaimed with plantation.	The land excavated after mining will be backfilled concurrently, which will be suitably reclaimed at later stage as per provisions of Mine Closure Plan (MCP).
xxxiii.	The OB shall be completely re-handled at the end of the mining.	Backfilling will be done concurrently as per the provisions of Mine Closure Plan (MCP).
xxxiv.	There shall be no residual OB dump after the mining.	Backfilling will be done concurrently as per the provisions of Mine Closure Plan (MCP).

xxxv.	After completion of mining activities, the subsided areas shall be graded and planted upon.	Presently there is no subsided area. Subsided areas, if occurring during mine life will be graded and planted upon.
xxxvi.	Coal extraction shall also be optimized in 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.	No depillaring activity is presently under taken. Coal pillars will be left intact to protect surface features like H.T. lines, roads and water bodies.
xxxvii.	The land excavated after mining must be brought back to original condition for agricultural / plantation purpose.	The land excavated after mining will be backfilled concurrently, which will be suitably reclaimed at later stage as per provisions of Mine Closure Plan (MCP).
xxxviii.	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. However, the quantum of mine water if used for drinking purposes will be treated as per the drinking water standards.
xxxix.	Final mine void 120.00 Ha and depth will not be more than 30 m. The void area will be converted into water body. The mine void should be used for piscicultue purpose.	Final mine void will be converted into water body.
xl.	Regular monitoring of subsidence movement on the surface over and around the working area and impact on naturl 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.	No depillaring activity (caving/stowing) is being done; there is no subsidence at present.
xli.	If subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement of the land owners.	No subsidence has been observed from older UG mine workings.
xlii.	Water sprinkling system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.	Sprinkling is done on regular basis to check the fugitive emissions at necessary points.

<table>
<tr><td>xliii.</td><td>The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per annual inflation.</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. Year wise CSR expenditure of Salanpur Area:-
<table><tr><th>Year</th><th>Expenditure of CSRactivities(in Lakhs)</th></tr><tr><td>2015-16</td><td>0.36</td></tr><tr><td>2016-17</td><td>59.00</td></tr><tr><td>2017-18</td><td>85.94</td></tr><tr><td>2018-19</td><td>73.10</td></tr><tr><td>2019-20</td><td>72.60</td></tr><tr><td>2020-21</td><td>154.00</td></tr><tr><td>2021-22</td><td>24.93</td></tr><tr><td>2022-23</td><td>33.69</td></tr><tr><td>2023-24</td><td>34.45</td></tr></table></td></tr>
<tr><td>xliv.</td><td>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 analyzed and monitored for compliance of conditions, bearing with movement of wildlife and until such time they are closed/phased out.</td><td>It will be done as per the Mine Closure Plan (MCP)</td></tr>
<tr><td>xlv.</td><td>Everybody in the core area should be provided with mask for protection against fugitive dust emissions.</td><td>Personnel working in the mining areas are equipped with dust masks, shoes,etc.</td></tr>
<tr><td>xlvi.</td><td>Dust mask to be provided to everyone working in the mining area.</td><td>Personnel working in the mining areas are equipped with dust masks, shoes,etc.</td></tr>
<tr><td>xlvii.</td><td>The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area.</td><td>The supervisory staff will ensure compulsory wearing of dust mask in the area.</td></tr>
<tr><td>xlviii.</td><td>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.</td><td>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.</td></tr>
<tr><td>xlix.</td><td>The mining area should be surrounded by green belt having thick closed canopy of the tree cover.</td><td>Mining area is surrounded by green cover and further plantation will be done to increase the thickness of the tree cover.</td></tr>
<tr><td>l.</td><td>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</td><td>As per the reports of the Area Medical Officer no occupational diseases have been reported.
If any occupational diseases found then they will be sent for health check up at Regional Hospital Salanpur at Kalla/ referred to specialized agency/institutuion within the District/State.
Work order has been issued to NIOH, Ahmedabad for this purpose.</td></tr>
</table>

	and the results reported to this Ministry and to DGMS.	
li.	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.	No nearby river is present. Hence, this condition is not applicable.
lii.	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.	External OB will be stabilized which minimizes the risk of its overflow.
liii.	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.	Catch drains within the cluster are being desilted every pre-monsoon in ECL. Surface sumps are present where mine water will be allowed to settle before being discharged.
liv	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 are provided to evacuate maximum single day rainfall. Inspection of drains had been carried out by safety personnel as part of pre-monsoon activity.
lv.	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.	Toe wall will be constructed after complete stabilization of OB dump.
lvi.	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	There is no CHP in the cluster.

	operations, conveyor system, haulage roads, transfer points, etc.	
lvii.	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.	It is being monitored by CMPDI and incorporated in the Environmental monitoring report.
lviii.	Drills shall be wet operated.	Drills are attached to the water sprinkling arrangements for wet operation.
lix.	The project authorities shall undertake regular 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.	As per requirement, regular repairing and tarring of roads are being taken on priority basis. Both sides of approach roads are well vegetated naturally.
lx.	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 in ECL with use of delay detonators.
lxi.	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. 5.4 Ha plantation is done in FY 2022-23 by West Bengal Forest Development Corporation Limited.
lxii.	The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.	It will be done as per the provisions of Mine Closure Plan (MCP).
lxiii.	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 provisions of Mine Closure Plan (MCP).

lxiv.	No groundwater shall be used for mining operations.	No ground water is being used for mining operations.
lxv.	An estimated total 560.47 Mm^3 of OB will be generated during the entire life of the mine. Out of which 378 Mm^3 of OB will be dumped in three external dump covering area 440 Ha of land and 182.47 Mm^3 in internal OB dumps covering an area of 485 Ha of land. The OB dump height is upto 90 m. The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegertation becomes self-sustaining and compliance status shall be submitted to MOEF&CC and its Regional Office on yearly basis.	It will be done as per the provisions of Mine Closure Plan (MCP).
lxvi.	Of the total quarry area 485.00 Ha, the backfilled quarry area of (365.00 Ha) shall be reclaimed with plantation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.	It will be done as per the provisions of Mine Closure Plan (MCP).
lxvii.	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.	Ground water level monitoring is being done regularly by CMPDIL on quarterly basis. Peizometer is installed in this cluster for monitoring of groundwater level.
lxviii.	The company shall put up artificial groundwater 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.	Ground water level monitoring is being done regularly by CMPDIL on quarterly basis. Presently Groundwater is being monitored by network of existing Dug wells. Piezometer is installed in this cluster for monitoring of groundwater level. Measures will be taken if any decline in water table is reported.
lxix.	Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater.	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.

lxx.	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.	It will be complied as per R&R Policy of CIL/National R&R Policy.
lxxi.	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.	Changes in the land use pattern is tracked by carrying out satellite imagery at every three years' interval. The previous satellite imagery was done in the year 2016 and the next is done in the year 2019. CMPDI, Ranchi is assigned with this task.
lxxii.	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.	All mines have approved MCP.
lxxiii	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.	CSR works are carried out by Welfare and CSR department. Nodal officer of CSR is present at Salanpur area. Nodal officer in consultation with BDO and local bodies undertakes the CSR activities.
lxxiv	**Corporate Environment Responsibility:**	
	a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.	Environment Policy of CIL: Coal India Limited (CIL) is committed to protect the environment through prevention, mitigation of pollution, proper disposal and recycling of wastes, conservation of biodiversity and bringing awareness among all its stakeholders for continual improvement in environmental performances following best practices.
	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.	The environment policy ensures compliance of EC conditions and other statuary conditions issued by regulatory agencies.
	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 each area of ECL which is responsible for looking after the compliances of the EC

		conditions of all the Clusters present in that 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 audit of the Clusters for compliance of the EC conditions and other regulatory compliances.

General Conditions

Sl no.	General 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.	No Change in technology will be made without prior approval of the MoEF&CC.
ii.	No change in the calendar plan of production for quantum of mineral coal shall be made.	Production will be done according to the prior approved calendar plan and under the limit of EC as given in the Specific Condition no.(i).
iii.	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM_{10} ,$PM_{2.5}$,SO_2 and NO_x monitoring. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.	Regular Environmental monitoring is being carried out on quarterly basis by CMPDI, Asansol. Monitoring stations have been located in accordance with the direction of the wind. Location of station changes in summer and winter season according to the direction of wind and monitoring is done as per the condition meeting the norms at upstream and downwind direction.
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.	Regular Environmental monitoring is being carried out on quarterly basis by CMPDI, Asansol. Same as per General Condition no.(iii)
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	Workers on pertinent activity are well equipped with ear plugs.

	HEMM, etc shall be provided with ear plugs/muffs.	
vi.	Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	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.	Vehicles will be checked for PUC certificates. Vehicles used for transporting coal are covered with tarpaulins and optimally loaded.
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.	Environmental Laboratory with latest equipment has been established at CMPDI, RI – I, Asansol. This lab is equipped with Atomic Absorption Spectrophotometer, weather monitoring system, BOD incubator, Photometer and other necessary equipment's
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 dust 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.	Occupational health surveillance i. e. Periodic Medical Examination (PME) is being done asper norms at Regional Hospital Salanpur.
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 Salanpur area which also looks after all the clusters under the area. The head of this cell reports to the General manager, Salanpur area.
xii.	The funds embarked for environmental protection measures shall be kept in separate account and shall not be diverted	Funds for environmental protection as kept in budget each year is not diverted for other purposes.

	for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional 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	Complied.
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 onthe 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 monthsso 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 the entrance of the project premises and mine office and in corporate office and on company's website.	EC letter displayed on company's website: http://securelogineCl.co.in/envdept/ Compliance letter uploaded on company's website: http://securelogineCl.co.in/envdept/

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.	It is being complied with.
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.	The Project authorities will extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.
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.

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

ENVIRONMENT MONITORING REPORT OF CLUSTER NO. 4

(FOR THE MONTH OF MARCH, 2024)

(SALANPUR AREA)

Eastern Coalfields Limited

cmpdi
A Mini Ratna Company

Regional Institute-1
Asansol (WB)

CHAPTER - I
INTRODUCTION

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

CHAPTER-II
AMBIENT AIR QUALITY MONITORING

2.0 Ambient air quality sampling stations: Ambient air quality monitoring stations have been classified in to residential and industrial based on their locations in different clusters of mines. The following sampling stations have been selected to monitor the ambient air quality in cluster no. 4:

i) CISF Camp, Mohanpur (4A1): The sampler was placed at CISF camp Mohanpur OCP. This station was selected to assess the ambient air quality of industrial area in the core zone of Mohanpur OCP where mining activities are in progress.

ii) Madanpur high school (4A2): The sampler was placed at Madanpur high school. This station was selected to assess the ambient air quality of residential area in the buffer zone of Bagunia OCP.

iii) Baliapur village (4A3): The air sampler was placed at Baliapur village which is in the buffer zone of Mohanpur OCP. The station was selected to represent the impact of mining activities of Mohanpur OCP in buffer zone.

iv) Natundih village (4A4): The air sampler was placed at Natundih village which is in the buffer zone of Gourandi Begunia OCP. The station was selected to represent the impact of mining activities of Gourandi Begunia OCP in buffer zone.

v) Madhudanga village (4A5): The air sampler was placed at Madhudanga village which is in the buffer zone of Gourandi Begunia OCP. The station was selected to represent the impact of mining activities of Gourandi Begunia OCP in buffer zone.

2.1 Methodology of sampling and analysis: The air quality 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. Particulate Matter (PM_{10}), Fine Particulate Matter ($PM_{2.5}$), Suspended Particulate Matter (SPM), Sulphur Dioxide (SO_2) and Oxides of Nitrogen (NO_x) are monitored on fortnightly basis. A few polluted sampling stations are monitored twice in a week. Heavy metals like Arsenic (As), Cadmium (Cd), Chromium (Cr), Mercury (Hg), Nickel (Ni) and Lead (Pb) are monitored half yearly.

The Respirable Suspended Particulate Matter (RSPM) Sampler & $PM_{2.5}$ Sampler machines are used for sampling of ambient air. The samples are collected and transported to Environmental Laboratory of CMPDI, RI-I, Asansol for analysis work.

2.2 Results & Interpretations: The observed value of Suspended Particulate Matter (SPM) varies from 293.4 to 308.5 µg/m^3 in industrial areas. The observed value of Particulate Matter (PM_{10}) varies from 202.8 to 254.3 µg/m^3 in industrial areas & from 143.6 to 227.4 µg/m^3 in residential areas. The observed value of Fine Particulate Matter ($PM_{2.5}$) varies from 53.7 to 60.1 µg/m^3 in industrial areas & from 42.8 to 63.9 µg/m^3 in residential areas· The observed value of Sulphur Dioxide (SO_2) has been found to be below 10 µg/m^3 in both industrial & residential areas· The observed value of Oxides of Nitrogen (NO_x) varies from 29.0 to 32.0 µg/m^3 in industrial areas & from 22.0 to 34.0 µg/m^3 in residential areas.

cmpdi
A Mini Ratna Company

ISO 9001: 2015 Certified Company
Environment Laboratory, CMPDIL, RI-I, Asansol

AMBIENT AIR QUALITY DATA

Name of the Customer: Eastern Coalfield Limited, Borachak House, P.O.-Sitarampur, Distt.-Paschim Bardhaman, West Bengal.

First fortnight:

Station Code	Station Name	Category of station	Date of Sampling	Parameter	Analytical Results ($\mu g/m^3$)	Name of method	Detection limit ($\mu g/m^3$)
4A1	CISF Camp, Mohanpur	Industrial	01-Mar-24	SPM	293.4	IS 5182 (Part 4):1999, R: 2019	5.0
				PM_{10}	202.8	IS 5182 (Part 23): 2006, R: 2022	3.5
				$PM_{2.5}$	60.1	IS 5182 (Part 24): 2019	2.0
				SO_2	BDL	IS 5182 (Part 2): 2001, R: 2017	10
				NO_x	29.0	IS 5182 (Part 6): 2006, R: 2017	10
4A2	Madanpur high school	Residential	01-Mar-24	PM_{10}	176.3	IS 5182 (Part 23): 2006, R: 2022	3.5
				$PM_{2.5}$	48.3	IS 5182 (Part 24): 2019	2.0
				SO_2	BDL	IS 5182 (Part 2): 2001, R: 2017	10
				NO_x	22.0	IS 5182 (Part 6): 2006, R: 2017	10
4A3	Baliapur village	Residential	01-Mar-24	PM_{10}	170.5	IS 5182 (Part 23): 2006, R: 2022	3.5
				$PM_{2.5}$	45.6	IS 5182 (Part 24): 2019	2.0
				SO_2	BDL	IS 5182 (Part 2): 2001, R: 2017	10
				NO_x	34.0	IS 5182 (Part 6): 2006, R: 2017	10
4A4	Natundih village	Residential	04-Mar-24	PM_{10}	208.3	IS 5182 (Part 23): 2006, R: 2022	3.5
				$PM_{2.5}$	63.9	IS 5182 (Part 24): 2019	2.0
				SO_2	BDL	IS 5182 (Part 2): 2001, R: 2017	10
				NO_x	29.0	IS 5182 (Part 6): 2006, R: 2017	10
4A5	Madhudanga village	Residential	04-Mar-24	PM_{10}	143.6	IS 5182 (Part 23): 2006, R: 2022	3.5
				$PM_{2.5}$	48.2	IS 5182 (Part 24): 2019	2.0
				SO_2	BDL	IS 5182 (Part 2): 2001, R: 2017	10
				NO_x	26.0	IS 5182 (Part 6): 2006, R: 2017	10

*BDL -Below detection limit.

Second fortnight:

Station Code	Station Name	Category of station	Date of Sampling	Parameter	Analytical Results (µg/m^3)	Name of method	Detection limit (µg/m^3)
4A1	CISF Camp, Mohanpur	Industrial	20-Mar-24	SPM	308.5	IS 5182 (Part 4):1999, R: 2019	5.0
				PM_{10}	254.3	IS 5182 (Part 23): 2006, R: 2022	3.5
				$PM_{2.5}$	53.7	IS 5182 (Part 24): 2019	2.0
				SO_2	BDL	IS 5182 (Part 2): 2001, R: 2017	10
				NO_x	32.0	IS 5182 (Part 6): 2006, R: 2017	10
4A2	Madanpur high school	Residential	20-Mar-24	PM_{10}	182.3	IS 5182 (Part 23): 2006, R: 2022	3.5
				$PM_{2.5}$	44.7	IS 5182 (Part 24): 2019	2.0
				SO_2	BDL	IS 5182 (Part 2): 2001, R: 2017	10
				NO_x	24.0	IS 5182 (Part 6): 2006, R: 2017	10
4A3	Baliapur village	Residential	20-Mar-24	PM_{10}	182.4	IS 5182 (Part 23): 2006, R: 2022	3.5
				$PM_{2.5}$	42.8	IS 5182 (Part 24): 2019	2.0
				SO_2	BDL	IS 5182 (Part 2): 2001, R: 2017	10
				NO_x	34.0	IS 5182 (Part 6): 2006, R: 2017	10
4A4	Natundih village	Residential	20-Mar-24	PM_{10}	227.4	IS 5182 (Part 23): 2006, R: 2022	3.5
				$PM_{2.5}$	57.3	IS 5182 (Part 24): 2019	2.0
				SO_2	BDL	IS 5182 (Part 2): 2001, R: 2017	10
				NO_x	31.0	IS 5182 (Part 6): 2006, R: 2017	10
4A5	Madhudanga village	Residential	20-Mar-24	PM_{10}	154.3	IS 5182 (Part 23): 2006, R: 2022	3.5
				$PM_{2.5}$	49.7	IS 5182 (Part 24): 2019	2.0
				SO_2	BDL	IS 5182 (Part 2): 2001, R: 2017	10
				NO_x	28.0	IS 5182 (Part 6): 2006, R: 2017	10

*BDL -Below detection limit.

Environmental Standards for Ambient Air Quality (AAQ):

Environmental standard for Raniganj Coalfield vide MOEF, Govt. of India, Gazette Notification No. GSR 742 (E) dated 25.09.2000 for 24 hourly samples at 500 meters from dust generating point					National Ambient Air Quality Standards (NAAQS), 2009 for industrial, residential and rural areas for 24 hours samples				
Pollutant Concentration (µg/m^3)					Pollutant Concentration (µg/m^3)				
SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_x	SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_x
600.0	300.0	Not Specified	120.0	120.0	Not Specified	100.0	60.0	80.0	80.0

cmpdi
A Mini Ratna Company

ISO 9001: 2015 Certified Company
Environment Laboratory, CMPDIL, RI-I, Asansol

AMBIENT AIR HEAVY METAL ANALYSIS REPORT

Name of the Customer: Eastern Coalfield Limited, Borachak House, P.O.-Sitarampur, Distt.-Paschim Bardhaman, West Bengal.

Station No.	Station Name	Date of Sampling	Arsenic (ng/m^3)	Cadmium (µg/m^3)	Chromium (µg/m^3)	Mercury (µg/m^3)	Nickel (ng/m^3)	Lead (µg/m^3)
Method of Detection			APHA 3114B AAS VGA	APHA 3113B AAS GTA	APHA 3111B AAS Flame	APHA 3112B AAS VGA	APHA 3113 B AAS GTA	APHA 3113 B AAS GTA
Detection Limit			**1.0**	**0.001**	**0.01**	**0.001**	**0.10**	**0.005**
4A1	CISF Camp, Mohanpur	1-Mar-24	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
4A2	Madanpur High School	1-Mar-24	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
4A3	Baliapur village	1-Mar-24	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
4A4	Nutandih village	4-Mar-24	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005
4A5	Madhudanga village	4-Mar-24	<1.0	<0.001	<0.01	<0.001	<0.10	<0.005

Environmental standards: National Ambient Air Quality Standards (NAAQS) for residential, industrial and rural areas for 24 hourly/yearly samples:

Heavy Metal	Arsenic (ng/m^3)	Cadmium (µg/m^3)	Chromium (µg/m^3)	Mercury (µg/m^3)	Nickel (ng/m^3)	Lead (µg/m^3)
Concentration	6	Not specified	Not specified	Not specified	20	0.5

CHAPTER – III
WATER QUALITY MONITORING

3.1 Mine water sampling stations:

i) **Gaurandih Begunia Phase- I OC patch (4MW1):** This location has been selected to monitor the discharge quality of Mine effluent to natural surface streams.

3.3 Methodology of sampling and analysis: The water samples are collected as per standard practice and transported to environment laboratory for analysis work.

The mine water samples are collected and analysed for five parameters on fortnightly basis except during the months of March and September when mine water samples are analysed for 29 parameters.

The ground water samples are collected and analysed for 26 parameters during the month of May. Water samples from filter plants are collected and analysed quarterly in the months of June, September, December and March.

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 samples and compared with IS.10500: 2012 in case of drinking/ground water samples.

ISO 9001: 2015 Certified Company
Environment Laboratory, CMPDIL, RI-I, Asansol

First fortnight:

Name of the Customer: Eastern Coalfield Limited, Borachak House, P.O.-Sitarampur, Distt.-Paschim Bardhaman, West Bengal.

Station name and Station Code: 4MW1- Gaurandih Begunia Phase- I OC Patch

MINE WATER QUALITY

Sl. No.	Parameters / Date of Sampling	Analytical Results (06-Mar-24)	General Standards for Discharge of Effluent (Schedule VI)	Method of Detection	Detection Limit
1	Colour	5	Unobjectionable	IS 3025 (Part 4): 2021	1.0
2	Odour	Unobjectionable	Unobjectionable	IS 3025 (Part 6): 1983, R: 2018	-
3	TSS	BDL	100	IS 3025 (Part 17):1984, R: 2017	10
4	pH	7.92	5.5-9.0	IS 3025 (Part 11): 1983, R: 2017	2.0
5	Temperature (^{0}C)	24.2	Shall not exceed 5 ^{0}C above the receiving water temperature	IS 3025 (Part 9): 1984, R: 2017	5.0
6	Oil & Grease	BDL	10	IS 3025 (Part 39): 1991, R: 2019	2.0
7	Total Residual Chlorine	BDL	1.0	APHA, 4500-Cl G. DPD Colorimetric	0.02
8	Ammonical Nitrogen	0.77	50	IS 3025 (Part 34): 1988, R: 2019	0.01
9	Total Kjeldahl Nitrogen	1.69	100	APHA 4500-N_{org} B. Macro-Kjeldahl	1.0
10	Free Ammonia	BDL	5.0	IS 3025 (Part 34): 1988, R: 2019	0.02
11	BOD	BDL	30	IS 3025 (Part 44): 1993, R: 2019	2.0
12	COD	24	250	APHA 5220C Closed Reflux	4.0
13	Arsenic	BDL	0.2	APHA 3112B AAS VGA	0.002
14	Lead	BDL	0.1	APHA 3113B AAS GTA	0.005
15	Hexavalent Chromium	BDL	0.1	APHA, 3500 – Cr^{6+} B. Colorimetric	0.01
16	Total Chromium	BDL	2.0	IS 3025 (Part 52): 2003, R: 2019	0.04
17	Copper	BDL	3.0	IS 3025 (Part 42): 1992, R: 2019	0.03
18	Zinc	0.03	5.0	IS 3025 (Part 49):1994, R: 2019	0.01
19	Selenium	BDL	0.05	APHA 3111B AAS Flame	0.002
20	Nickel	BDL	3.0	IS 3025 (Part 54): 2003, R: 2019	0.01
21	Fluoride	0.38	2.0	APHA, 4500 –F D. SPADNS	0.02
22	Dissolved Phosphate	1.76	5.0	APHA, 4500-P C. Vanadomolybdophosphoric Acid Colorimetric	0.30
23	Sulphide	0.014	2.0	APHA, 4500 - S^{2-} D. Methylene Blue	0.005
24	Phenolics	BDL	1.0	APHA, 5530 C. 4-Amino-Antipyrine-Chloroform Extraction	0.001
25	Manganese	0.02	2.0	IS 3025 (Part 59): 2006, R: 2017	0.02
26	Iron	BDL	3.0	IS 3025 (Part 53): 2003, R: 2019	0.06
27	Nitrate Nitrogen	1.44	10	APHA, 4500-NO_3^- B. UV-Spectrophotometric Screening	0.5
28	Cadmium	BDL	2.0	APHA 3113B AAS GTA	0.0005
29	Total Dissolved Solids	780	Not Specified	IS 3025 (Part 16): 1984, R: 2017	25.0

*BDL-Below Detection Limit

All values are expressed in mg/L unless specified.

Second fortnight:

Sl. No.	Parameters	Analytical results (mg/l)	General Standards for Discharge of Effluent (Schedule VI)	Name of Method	Detection Limit (mg/l)
	Station Code	**4MW1**			
	Date of sampling	21-Mar-24			
1	pH value	7.96	5.5 - 9.0	IS 3025 (Part 11) : 1983, R: 2017	2.0
2	TSS	BDL	100	IS 3025 (Part -17): 1984, R: 2017	10.0
3	TDS	411	Not specified	IS 3025 (Part -16): 1984, R: 2017	25.0
4	Oil & Grease	BDL	10	IS 3025 (Part 39) : 1991, R: 2019	2.0
5	COD	12	250	APHA 5220C Closed Reflux	4.0

*BDL-Below Detection Limit.

All values are expressed in mg/l except pH.

NOISE LEVEL MONITORING

4.1 Location of sampling sites and their rationale:

i) Gourandih Begunia OCP workshop (4N1): To assess the noise level at workplace, the noise levels were recorded in the mine area where all mining activities are in progress.

ii) Itapara OCP (4N2): To assess the noise level at mine site, the noise levels were recorded in the mine area where all mining activities are in progress.

iii) Gourandih D OCP (4N3): To assess the noise level at mine site, the noise levels were recorded in the mine area where all mining activities are in progress.

4.2 Methodology of sampling and analysis: The noise level is observed at the monitoring stations during day and night time. Noise level measurements are taken in form of 'Leq' using Integrated Data Logging Sound Level Meter. Noise levels are measured in decibels, 'A' weighted average, i.e. dB(A).

4.3 Results & Interpretations: The observed values of noise level measurements are compared with Noise Pollution (Regulation and Control) Rules, 2000. The observed values of noise level are as shown in table below:

NOISE LEVEL DATA

Name of the Customer: Eastern Coalfield Limited, Borachak House, P.O.-Sitarampur, Distt.-Paschim Bardhaman, West Bengal.

Station Code	Station Name	Date of sampling	Sampling duration (hrs.)	Day – time Noise Level dB(A) Leq	Night – time Noise Level dB(A) Leq	Day – Night Noise Level dB(A) Leq
4N1	Gourandih Begunia OCP Workshop	17-Jan-24	17.16 to 13.18	68.24	53.19	66.11
4N2	Itapara OCP	15-Jan-24	15.27 to 13.11	73.24	47.82	71.28
4N3	Gourandih D OCP	19-Jan-24	16.16 to 14.47	66.74	49.38	64.82

Noise Pollution (Regulation and Control) Rules published in Gazette of India, vide S. O. 123 (E) dated 14.02.2000 under Environment Protection Act, 1986.

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
Silence Zone	50.0	40.0