

COMPLIANCE OF EC CONDITIONS OF 5.0 MTPA
MADHUBANDNLW COAL WASHERY

EC order No. J-11015/234/2009-IA-II (M), dated: 25.01.2012

October 2022 to March 2023

A.	Specific Conditions:	Compliance Status
(i)	The capacity of the Washery shall not exceed 6.5 MTPA without prior environmental clearance from this Ministry.	Being Complied. Madhuband NLW Coal Washery will not exceed 6.5 MTPA capacity without prior NOC from MoEF&CC.
(ii)	Transport of washed coal from the Washery to the steel plants in Durgapur, Bhilai and Bokaro shall be by rail from the railway siding located within the premises.	Being Complied. Railway Siding located within the premises of the Madhuband NLW Coal Washery, is being used for transportation of Washed Coal products to identified steel plant.
(iii)	The entire coal rejects from the Washery shall be fully utilised in an FBC based TPP for which open tender for the operation of the FBC based TPP has been called by the proponent. The FBC-based TPPs shall be preferably located in or near Jharia coalfields. The Company shall enter into a long-term MOU for utilization of the coal rejects from the Washery within 3 months and also for utilisation of fly-ash generated from the FBC-based TPP with M/s ACC Ltd or any suitable company.	Being Complied. Government of India has changed policy of reject disposal and handling which is being complied. The rejects produced are being stacked separately and its disposal is carried out as per the <i>Policy for Handling & Disposal of Washery Rejects, 2021</i> prescribed by the Ministry of Coal.
(iv)	The entire coal rejects to be sent to the FBC-based TPP shall be by rail mode.	Being Complied. Railway Siding, located within the premises of the Madhuband NLW Coal Washery, is being used for transportation of Rejects.
(v)	As the Washery is located in Jharia Coalfields, which forms a part of the Critically Polluted Area of Dhanbad, the company shall implement the mitigative measures outlined in the Environmental Action Plan for CPA-Dhanbad applicable to the project, which would be in conformity with the Environmental Action Plan prepared for Dhanbad Area to keep the levels of air quality parameters well within limits. The proponent shall implement mitigative measures such as providing water sprinkling arrangements at various transfer points and	Being Complied. This unit is operating as per the guidelines of Environmental Action Plan for CPA-Dhanbad & takes all the mitigative measures to keep air quality parameters well within limit. The unit has installed sufficient sprinkling arrangements on roads and all coal transfer points (Photographs of mobile water sprinkler are enclosed in <i>ANNEXURE-I</i>). Regular maintenance of vehicles is being done to keep minimum source emissions. (Annexure2)

conducting an investigation. The results of the investigation are being used to determine the cause of the problem and to develop a plan of action to correct the problem. The results of the investigation are being used to determine the cause of the problem and to develop a plan of action to correct the problem.

These two groups will both exhibit properties of being homogeneous, and also that the second will exhibit an irregular interval.

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(54) The proponent shall implement a plan to regularly dredge River Damodar 1/2 km upstream and 1 km length downstream of the Washery free of sludge and fines and silt which he accumulated in the river over a period of time and dispose the waste in an environmentally friendly manner in consultation with the Haryana State Pollution Control Board.

Wage **employment**

Unit	Wipes	Wash/Bleach/Paint	NEW	Cost
Washers - operating or for discharge				
Aggs. or waste water or discharged from this unit				

Further the Washery Unit is nearly 0.4 KM away from Chinnodhar River and so effluent discharge from this unit will meet to Chinnodhar River. Therefore no damage or soil fines leachout and pollution will be caused by the Washery.

(vi) The use and control and use and control should be under property a common interest within stock, with the will and shareholders should. Adequate measures should be taken to ensure that the stock is not used to control and use and control should not be used.

Security Considerations

1. 在 1990 年 12 月 31 日，公司资产总额为 1000 万元，负债总额为 400 万元，所有者权益总额为 600 万元。
 2. 1991 年 1 月 1 日，公司资产总额为 1100 万元，负债总额为 450 万元，所有者权益总额为 650 万元。
 3. 1991 年 2 月 1 日，公司资产总额为 1200 万元，负债总额为 500 万元，所有者权益总额为 700 万元。
 4. 1991 年 3 月 1 日，公司资产总额为 1300 万元，负债总额为 550 万元，所有者权益总额为 750 万元。
 5. 1991 年 4 月 1 日，公司资产总额为 1400 万元，负债总额为 600 万元，所有者权益总额为 800 万元。
 6. 1991 年 5 月 1 日，公司资产总额为 1500 万元，负债总额为 650 万元，所有者权益总额为 850 万元。
 7. 1991 年 6 月 1 日，公司资产总额为 1600 万元，负债总额为 700 万元，所有者权益总额为 900 万元。
 8. 1991 年 7 月 1 日，公司资产总额为 1700 万元，负债总额为 750 万元，所有者权益总额为 950 万元。
 9. 1991 年 8 月 1 日，公司资产总额为 1800 万元，负债总额为 800 万元，所有者权益总额为 1000 万元。
 10. 1991 年 9 月 1 日，公司资产总额为 1900 万元，负债总额为 850 万元，所有者权益总额为 1050 万元。
 11. 1991 年 10 月 1 日，公司资产总额为 2000 万元，负债总额为 900 万元，所有者权益总额为 1100 万元。
 12. 1991 年 11 月 1 日，公司资产总额为 2100 万元，负债总额为 950 万元，所有者权益总额为 1150 万元。
 13. 1991 年 12 月 31 日，公司资产总额为 2200 万元，负债总额为 1000 万元，所有者权益总额为 1200 万元。

● 2010年10月10日

(ix)	All approach roads shall be blacktopped and all internal roads shall be blacktopped or concreted. The roads shall be regularly cleaned with mechanical sweepers. A 3-tier avenue plantation using local species shall be developed along the main roads, and approach roads to the Washery.	Being Complied. Approach roads have been concreted(Annexure 4) and internal roads is being concreted. Presently, cleaning of roads is being done manually in regular manner. Gabion plantation along the main/approach road is being done. Further, plantation activities have been carried out at different locations in the project.
(x)	High capacity/tonnage trucks shall be engaged for the transportation of raw coal to the Washery and which shall be optimally loaded and covered with a tarpaulin with no spillage en route. The trucks shall be properly maintained and emissions shall be below notified limits.	Being Complied. Trucks having valid PUC certificates (Annexure 2) are being used for the transportation of raw coal to the Washery, and are loaded optimally within the limits and covered with tarpaulin to ensure no spillage en route.
(xi)	The proponent shall maintain proper records of the ash content of raw (ROM) coal, clean coal and coal rejects of every consignment received and washed and the same shall be uploaded along with quantum of raw coal obtained and washed and dispatched every month on theCompany's website every month.	Being Complied. Proper records of Ash content of Raw Coal, Clean Coal and Coal By-products is being maintained and being uploaded with this report.(Annexure 5)
(xii)	Water for the coal Washery shall be met from mine water from BCCL mines. No groundwater shall be used for the Washery plant operations. Any additional water requirement envisaged shall be obtained by recycle/reuse to the maximum extent and from rainwater harvesting measures. Pressure Filter and Thickener shall be installed in the Washery for water recovery and reuse.	Complied. Water is being recycled in Washery. Make up water for Washery is being met from the Block II mine of BCCL along with waste water from nearby BCCL colonies. Construction of infrastructure for Rain Water Harvesting has been completed. No groundwater is being used for the Washery plant operations. The Pressure Filter and Thickener are installed and in operation.(Annexure6)
(xiii)	The Washery unit shall be a zero-discharge facility and no waste water shall be discharged from the Washery into the drains/natural watercourses. The Washery shall be provided with a garland drain to carry/recycle the effluents generated from the Washery operations and coal fines collected shall be recovered from the slurry and concentrated and also sold for	Complied. Washery is operating on Zero-Liquid Discharge Basis and no waste water is being discharged from this unit. The Washery has been provided with a garland drain. (Annexure 7)

	users. The wastewater from the Washery shall be free of coal dust and particles and recycled for development and maintenance of green belt and in the plant operations.	
(xiv)	A separate storm water drain to carry storm water from the Washery for discharge outside the premises to nallahs/streams shall be established. The storm water drains shall be regularly desilted.	Complied. Separate drain to carry out the storm water from the Washery has been constructed and is cleaned regularly.
(xv)	Industrial wastewater (workshop and wastewater from the Washery) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed for treatment of workshop effluents.	Oil and grease trap is being installed for treatment of workshop effluents along with workshop.
(xvi)	Green belt shall be developed using local species all along the periphery of the site, along the areas such as the crushing unit and stockyard, transfer and loading points.	Being Complied. 12.4 Ha of 3-tier plantation has already been done. Further, plantation of 500 saplings of local species has been done recently in and around the Washery. Also, regular plantation drives to further boost the green cover are being carried out during World Environment Day, Van Mahotsav, Vriksharopan Abhiyaan, etc.
(xvii)	Socio-economic and welfare measures for the local communities shall be implemented under CSR with an outlay of Rs 2 crores/year. The village-wise activities undertaken and proposed and the expenditure thereon shall be displayed on the company website every year. A Monitoring Cell shall be established for monitoring activities undertaken under CSR.	Being Complied. As per Company's policy, a monitoring Cell of the Company already exists for monitoring activities under taken under CSR.
(xviii)	Levels of heavy metals such as mercury in raw coal, washed coal and rejects shall be analysed twice in a year and records maintained thereof and furnished as part of the Compliance Report to the MOEF RO, Bhubaneswar.	The level of heavy metal for raw coal receiving from Block-II Mines is enclosed as Annexure 8.
(xix)	Corporate Environment Responsibility: a) The company shall have a well laid down Environment Policy approved by	Being Complied. A well-defined Corporate Environment Policy has already been laid down and

	the Board of Directors. 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. 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. d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.	approved by the Board of Directors. This is also posted on BCCL website. (https://www.bcclweb.in/environment/CEP_280220.pdf). An Environment department at BCCL H.Q. looks after the infringements/deviation/ violation of Environment & Forest norms, environmental issues, and compliances, etc., for all the units running in BCCL. To implement the Corporate Environment Policy, a manual for Environment Personnel is prescribed by CIL : https://www.coalindia.in/media/document/s/Guidelines for Environmental Personnel in Mines 20092016 hAukCHt.pdf) which has the proper operating procedures. In addition, status of Environment Management is reported to the BCCL Board every quarter. Monitoring is being done by CMPDIL which has NABL accredited laboratory.
B.	General Conditions:	
i.	No change in technology and scope of working of the Washery shall be made without prior approval of the Ministry of Environment and Forests.	Being Complied.
ii.	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring PM10, PM2.5, SO2 and NOx. 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, PM10 and PM2.5 etc. shall be carried out at least once in six months.	Being Complied. Four ambient air monitoring stations for monitoring of PM10, PM2.5, SO2 and NOx have been established in the core zone and buffer zone (Monitoring Reports enclosed as Annexure 9). Monitoring is being done by CMPDIL, which has NABL accredited laboratory. Data of six-monthly monitoring (done by CMPDIL) of heavy metals is also enclosed. Monitoring is being done by CMPDIL, which has NABL accredited laboratory.
iii.	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got	Being Complied. Four ambient air monitoring stations for monitoring of PM10, PM2.5, SO2 and NOx have been established in the core zone and buffer zone (Monitoring Reports enclosed as Annexure 9).

	analysed through a laboratory recognised under EP Rules, 1986.	Presently, CMPDIL Dhanbad is carrying out regular monitoring of environmental quality work.
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 the 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.	Being Complied. Four ambient air monitoring stations for monitoring of PM₁₀, PM_{2.5}, SO₂ and NO_x have been established in the core zone and buffer zone (Monitoring Reports enclosed as Annexure 10). Monitoring is being done by CMPDIL, which has NABL accredited laboratory. Data of six-monthly monitoring (done by CMPDIL) of heavy metals is also enclosed. (Annexure 10) Monitoring for the same is done by CMPDIL having own laboratory recognized under EPA Rules, 1986.
v.	Adequate measures shall be taken for control of noise levels below 85 dBL in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM etc. shall be provided with ear plugs/muffs.	Being Complied. Preventive measure i.e. maintenance is being taken to keep the noise levels below 85 dBL in the work environment. Monitoring is being done by CMPDIL, which has NABL accredited laboratory. Monitoring Reports are enclosed as Annexure 9.
v.	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. 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.	Complied. All workers are provided with training on safety and health aspect with effective sprinkling and proper enclosure, and dust suppression is ensured in the Washery. In addition, protective respiratory devices are being provided to the workmen. As per Company's Policy, periodic PME of all the workmen is being done.
vi.	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.	Being Complied. A full- fledged Environment Department, headed by an HoD (Environment) along with a suitable qualified multidisciplinary team of executives which includes Environment, Mining, Excavation, Civil, Survey, Electrical & Mechanical, Forestry discipline executives and technicians (4 nos.) has been established in BCCL Headquarters. They are also trained in ecological restoration, sustainable development, rainwater harvesting methods, etc. At the project level, one Executive in each Area has also been

		nominated as Project Nodal Officer (Environment) and is also entrusted with the responsibility of compliance and observance of the Environmental Acts/ Laws including Environment Protection measures. The activities are monitored on regular basis at Area and at Head quarter levels. HoD (Environment) at Headquarter level coordinates with all the Areas and reports to the Director (Technical) and in turn he reports to the CMD of the company The team is multidisciplinary and very much motivated under the guidance of company's Director (Technical) and CMD for further capacity building.
vii.	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office Bhubaneshwar.	Complied. Earmarked Funds for Environment Protection and Environment Compliance related activities are allotted in the Budget every financial year, which are kept separately under Environment Head of the Budget. The year wise expenditure is as follows:
viii.	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in	Complied. The Washery has already advertised the Environment Clearance letter in local newspapers for wide circulation. A copy of the Environmental Clearance has also been displayed on the Company's website and MoEFCC.
ix.	A copy of the environmental clearance letter shall be marked to concerned Panchayat/ Zila Parishad/Municipal Corporation or Urban Local Body/ 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 the company's website.	Complied. The copy of Environmental Clearance has already been made available to District Collector, local Zila Parishad, Ward Councillor, Municipal Corporation. A copy of the Environmental Clearance has also been displayed on the Company's website.
x.	A copy of the clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the	Complied. The Environmental Clearance letter has already been forwarded to Jharkhand State Pollution Control Board, Regional

	Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.	Office, District Industry Centre and Collector's Office for doing the needful.
xi.	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC 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 the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM10, PM2.5, SO2 and NOx (ambient and stack if any) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.	Being Complied. The Environment Clearance letter has been uploaded on the Company's website. Compliance Status Report is also regularly uploaded on the Company's website every six months. Environment Monitoring Report along with six monthly compliance report are displayed on the Company's website. Monitoring data of environmental quality parameters has been displayed at the project office and being updated regularly.
xii.	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.	Complied.
xiii.	The Regional Office of this Ministry located in Bhubaneswar 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.	Being Complied.
xiv.	The environmental statement for each financial year ending 31st March in Form-V is mandated to be submitted by the project proponent to 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 by E-mail.	Complied.



Project Officer

5.0 MTPA Madhuband NLW Coal Washery

Code of practice for 5.0 Mtpa Madhuband NLW Coal Washery is as below:

Sl.No	Particulars	Compliance
1	Water or Water mixed chemical shall be sprayed at all strategic coal transfer points such as conveyors, loading/unloading points etc. As far as practically possible conveyors, transfer points etc. shall be provided with enclosures.	Water sprinklers installed along conveyor, transfer points and crushing points. The conveyor, transfer points are properly enclosed.
2	The crushers/pulverizes of the coal washeries shall be provided with enclosures, fitted with suitable air pollution control measures and finally emitted through a stack of a minimum height of 30m. conforming particulate matter emission standard of 150 mg/Nm ³ or provided with adequate water sprinkling arrangement	The crushers of the coal washeries are properly enclosed and water sprinkling arrangement is present as air pollution control measures.
3	Water sprinkling by using fine atomizer nozzles arrangement shall be provided on the coal heaps and on around the crushers/pulverizes.	Fixed sprinklers and mobile tankers are being used for water sprinkling on coal heap and around crushers
4	Area, in and around the coal Washery shall be pucca either asphalted or concreted.	Concrete roads have been constructed in and around Washery.
5	Water consumption in the coal Washery shall not exceed 1.5 cubic meter per tonne of raw coal.	The Water consumption in the coal Washery is not exceeding 1.5 cubic meter per tonne of coal.
6	The efficiency of the settling ponds of the wastewater treatment system of the coal Washery shall not be less than 90%.	Being complied.
7	Green belt shall be developed along the roadside, coal handling plants, residential complexes, office building and all around the boundary line of the coal Washery.	12.4 Ha of 3-tier plantation has already been done.(Annexure.3, 4) Further, plantation of 500 saplings of local species has been done recently in and around the Washery. Also, regular plantation drives to further boost the green cover are being carried out during World Environment Day, Van Mahotsav, Vriksharopan

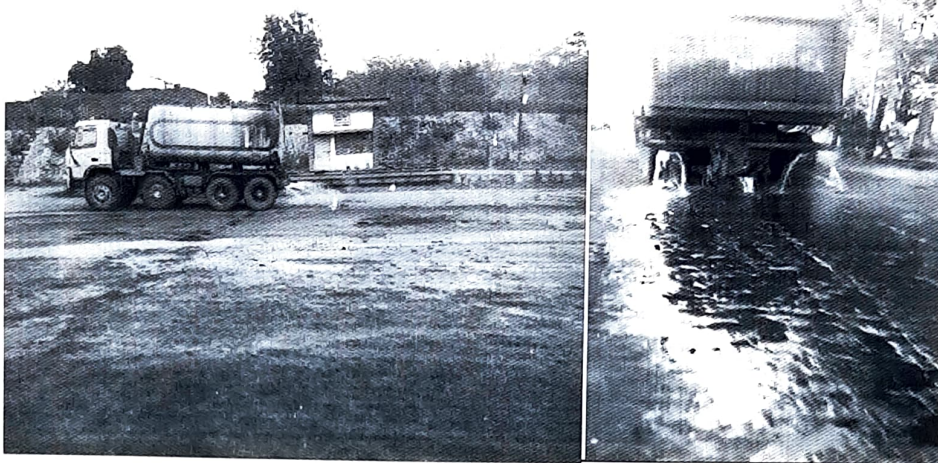
		Abhiyaan, etc.
8	Storage bunkers, hoppers, rubber decks in chutes and centrifugal chutes shall be provided with proper rubber linings.	The Storage bunkers, hoppers, rubber decks in chutes and centrifugal chutes is provided with proper rubber lining.
9	Vehicles movement in the coal Washery area shall be regulated effectively to avoid traffic congestion. High pressure horn shall be prohibited. Smoke emission from heavy duty vehicle operating in the coal washeries should conform the standards prescribed under Motor Vehicle Rules, 1989.	Security guards are being posted to monitor the Vehicle's movement to avoid traffic congestion in the coal Washery. Trucks having valid PUC certificates (Annexure 2) are being used for transportation No High pressure horn is being used in vehicles.

2.4.1 Trace elements/ Heavy metals concentration in Coals of following mines (in ppm)

Sample collected from	Ash	As	Hg	Cd	Ni	Co	Cr	Cu	Zn	Mn	V	Pb
Muraidih Colliery	45.2	11.3	0.65	0.50	100.0	29.8	135.6	26.0	35.0	85.0	67.8	45.0
Nudkharkee Colliery	47.6	19.0	0.59	0.70	48.0	35.2	119.0	35.0	36.0	75.0	75.0	31.0
Benedih Colliery	40.8	20.4	0.48	0.40	92.0	33.7	142.0	32.0	42.0	70.0	80.0	25.0

*Sulphur Concentration : 0.2-0.7%

MOBILE SPRINKLING AT 5.0 MTPA MADHUBAND NLW COAL WASHERY



GOVERNMENT OF NAGALAND

Motor Vehicles Department

KOHIMA RTO

FORM 38

[See Rule 62(1)]

CERTIFICATE OF FITNESS

(Applicable in the case of transport vehicles only)



Vehicle No: NL01AB9833 (Goods Carrier) is certified as complying with the provisions of the Motor vehicles Act, 1988 and the rules made there under.

Registration No : NL01AB9833
 Application No : NL22062847769669
 Inspection Fee Receipt No : NL1R220600011062
 Receipt Date : 28-Jun-2022
 Chassis No : MAT466611J3E15470
 Engine No : 81E63694404
 Seating Capacity : 3 (Including Driver)
 Type of Body : TIPPER
 Manufacturing Year : 2018
 Category of Vehicle : HGV
 Inspected on : 28-Jun-2022
 Printed on : 28-Jun-2022 16:47:50

Certificate will expire on : 22-Jul-2024

Next Inspection Due Date : 23-Jun-2024

Inspected by (MULUSATO SHIJOH)

Signature of Inspecting Authority
 KOHIMA RTO



ANNEXURE 4



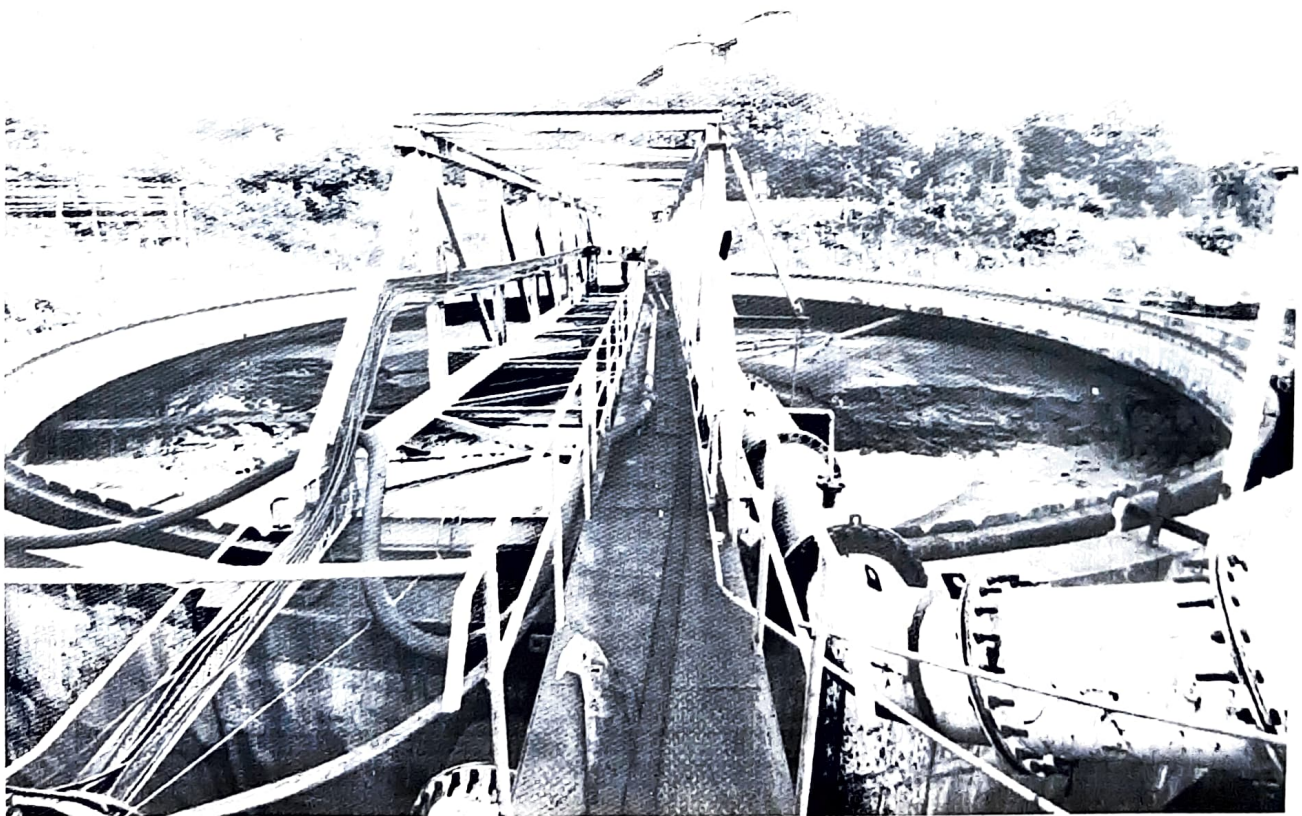
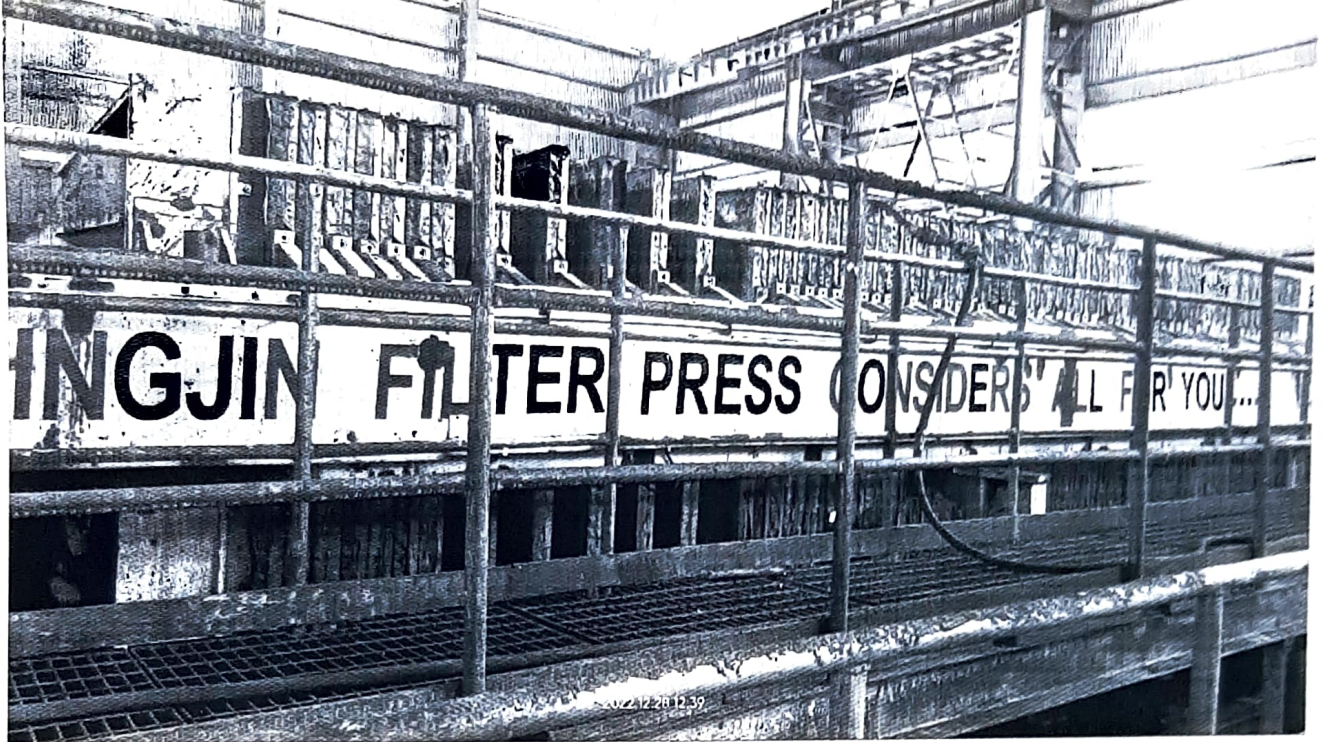
Madhuban

RAW COAL						
Date Of Sample	TM	ADB				
		ASH %	M %	VM %	FC %	GCV Kcal/Kg
31-Oct-22	3.51	49.04	1.25	13.25	36.46	
31-Oct-2022 (Stock Tube)	3.62	49.64	1.20	14.44	34.72	
1-Nov-22	3.49	51.02	1.17	12.73	35.08	
2-Nov-22	3.37	52.16	1.10	12.86	33.88	

WASH POWER COAL					
Date Of Sample	TM	ADB			
		ASH %	M %	VM %	FC %
31-Oct-22	7.52	21.5	0.83	15.26	62.41
1-Nov-22	7.48	34.02	1.19	14.97	49.82
2-Nov-22	7.61	36.77	1.23	14.77	47.23

WASH COAL					
Date Of Sample	TM	ADB			
		ASH %	M %	VM %	FC %
31-Oct-22	7.12	14.55	1.05	16.64	67.76
1-Nov-22	7.31	14.41	1.26	17.86	66.47
2-Nov-22	7.29	10.10	1.17	19.12	69.61

REJECTS					
Date Of Sample	TM	ADB			
		ASH %	M %	VM %	FC %
31-Oct-22	8.73	37.52	1.14	14.42	
1-Nov-22	8.68	63.05	0.91	12.40	
2-Nov-22	8.59	67.06	0.98	11.90	
2-Nov-2022 Primery U/Flow	8.43	38.38	1.03	15.22	





2.4.1 Trace elements/ Heavy metals concentration in Coals of following mines (in ppm)

Sample collected from	Ash	As	Hg	Cd	Ni	Co	Cr	Cu	Zn	Mn	V	Pb
Muraidih Colliery	45.2	11.3	0.65	0.50	100.0	29.8	135.6	26.0	35.0	85.0	67.8	45.0
Nudkhurkee Colliery	47.6	19.0	0.59	0.70	48.0	35.2	119.0	35.0	36.0	75.0	75.0	31.0
Benedih Colliery	40.8	20.4	0.48	0.40	92.0	36.7	142.0	32.0	42.0	70.0	80.0	25.0

*Sulphur Concentration : 0.2-0.7%

		CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED Environment Laboratory, Regional Institute-II Ambient Air Quality Test Report				 cmpdi <i>A Min. Rules Company</i>		CMPDI, RI-II KOYLA BHAWAN COMPLEX DHANBAD. -826005 Phone:0326-223-850 email: rdri2cmpdi@coalindia.in		
Test Report for Ambient Air Samples										
Month & Year		08/2022		Cluster		Cluster I		Report No.		RI-II/AIR/2022-23/05
Customer		Environment Department, Bharat Coking Coal Limited (BCCL), Koyla Bhawan, Dhanbad (E-mail: gmenv.bccl@coalindia.in)		Sample Ref. No.		REM/BCCL/2022/08		Date of Issue		26.10.2022
Project		Sampling Stations: Madhuband washery (A3)*		Date of Sampling		12.08.2022		Sampling Method		CMPDI/RI-II/LPM 13, (IS 5182)
								Zone of Station		Industrial area
								Buffer Zone		
								AREA		
								MoEF Standards Notification dated 25th September, 2000 (GSR 742 E)		
								NAAQS, 2009		
Sl. No.	Parameter	Method of Analysis	Observed Values (in $\mu\text{g}/\text{m}^3$)		Range Of Testing	LDL	MoEF Standards Notification dated 25th September, 2000 (GSR 742 E)		NAAQS, 2009	
			1st FN	2nd FN						
1	PM ₁₀	IS-5182(Part 23):2006, R-2017	117	66	10 $\mu\text{g}/\text{m}^3$ - 1000 $\mu\text{g}/\text{m}^3$	10 $\mu\text{g}/\text{m}^3$	300		100	
2	PM _{2.5}	IS-5182(Part 24):2019	65	36	10 $\mu\text{g}/\text{m}^3$ - 400 $\mu\text{g}/\text{m}^3$	10 $\mu\text{g}/\text{m}^3$	Not Specified		60	
3	SO ₂	IS-5182(Part-2): 2001, R-2017	<10	14	10 $\mu\text{g}/\text{m}^3$ - 1050 $\mu\text{g}/\text{m}^3$	10 $\mu\text{g}/\text{m}^3$	120		80	
4	NO ₂	IS-5182 (Part-6): 2006, R-2017	20	22	06 $\mu\text{g}/\text{m}^3$ - 420 $\mu\text{g}/\text{m}^3$	06 $\mu\text{g}/\text{m}^3$	120		80	
* LDL indicates Lower Detection Limit.										
** All units are in $\mu\text{g}/\text{m}^3$, 24 hourly Average.										
 ANALYSED BY		(Gaurav Kant) CHECKED BY		(Amit Raj Mishra) HOD's Signature						
Note: The results above relate to the samples tested as received. This report can not be reproduced in part or full without the written permission of the HOD(Env).										
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JOB NO. 200316028

Cluster - I, BCCL

Environmental Monitoring Report

Heavy Metal Analysis report of Ambient Air Quality

SAMPLE	Cadmium(Cd) (µg/m3)	Mercury(Hg) (µg/m3)	Arsenic(As) (ng/m3)	Chromium(Cr) (µg/m3)	Nickel (Ni) (ng/m3)	Lead (Pb) (µg/m3)
Karmatand village (A1)	<0.001	<0.001	<0.005	0.02	0.1	0.101
Damoda (A2):	<0.001	<0.001	<0.005	0.01	<0.1	0.05
Madhuband washery (A3)	<0.001	<0.001	<0.005	<0.01	<0.1	0.048
Block II OCP (A4):	<0.001	0.004	<0.005	<0.01	<0.1	0.092
Regional Hospital Baghmara (A42):	<0.001	<0.001	<0.005	0.03	<0.1	0.098

आम रक्षक

Analysed By
JANAKA

Checked By
Subin C. Jangra
AIR-2, CMPDI, Dhanbad

Approved By
HOD(In-charge) Environment
RI-2, CMPDI, Dhanbad