SHAKAMBHARI GROUP

SHAKAMBHARI ISPAT & POWER LTD.

CIN: U27109WB2001PLC093869 | GSTIN: 19AADCM1189L1Z1 | PAN: AADCM1189L | LEI NO. 335800SMV4ZAHMEP1S72

Ref: -SIPL/SMC/MoEFCC/APRIL-2024 TO SEPT-2024 Date: 21.11.2024

To,
The Dy. Director General of Forest (DDGF)
GOI, MoEF&CC, Sub Office, Kolkata
IB-198, Salt Lake City, Sector-III, Kolkata – 700106

SUB: Six Monthly Compliance (April-2024 to Sept-2024) to Environmental Clearance conditions vide MoEF&CC F. No.: IA-J-11011/282/2021-IA-II(IND-I) dated 19.07.2023 and F. No. J-11011/201/2013-IA- II (I) Dated 21st December, 2016 & EC amendment dated 29th April, 2020 by M/s Shakambhari Ispat & Power Limited, Vill-Madandih, PO-Bartoria, Dist- Purulia (WB)-723121

Respected Ma'am,

With reference to above, we are submitting herewith the six-monthly compliance report (Period April-2024 to Sept-2024) of M/s Shakambhari Ispat & Power Limited, Vill-Madandih, PO-Bartoria, Dist- Purulia (WB) as per the directives of Ministry of Environment Forest and Climate Change, Government of India. Point wise compliance status report along with latest environment monitoring data is enclosed for your kind consideration.

Hard copy of the report has not been sent following MoEFCC Eastern Regional Office direction vide File No. 106-12/EPE Dated 11.05.2020. Hope you will find the same in order.

Kindly acknowledge our submission.

Thanking you and with regards,

Yours faithfully,

For **Shakambhari Ispat & Power Limited**

21/11/2024

Authorized Signatory

Shakambhari Ispat & Power Ltd. MADANDIH PURULIA

Encl: as above

Copy to:
The Environmental Engineer, West Bengal Pollution Control Board, Asansol Regional Office, Kalyanpur Satelite Township Project, Dr. B.C. Roy Road, PO- Dakshin Dhadka, Asansol-713302 Dist.-Paschim Bardhaman (WB)

SHAKAMBHARI ISPAT & POWER LIMITED

COMPLIANCE STATUS OF ENVIRONMENTAL CLEARANCE

MoEF &CC. No.: IA-J-11011/282/2021-IA-II(IND-I) dated 19.07.2023

COMPLIANCE PERIOD:

APRIL 2024 – SEPTEMBER 2024

PROJECT LOCATION:

Village-Madandih, P.O.-Bartoria, Dist.-Purulia, West Bengal-723121

Name of the Project	:	**Shakambhari Ispat & Power Limited** Village-Madandih, PO-Bartoria Dist.–Purulia (WB)
Environmental Clearance F. No.	:	MoEF&CC. F. No: IA-J-11011/282/2021-IA-II(IND-I) dated 19.07.2023 and EC F. No. J-11011/201/2013-IA II (I) Date: 21.12.2016 & EC amendment dated 29.04.2020.
Period of Compliance Report	:	**APRIL 2024 – SEPTEMBER 2024**

MoEF&CC. EC F. No: IA-J-11011/282/2021-IA-II(IND-I) dated 19.07.2023		
Sl. No.	**CONDITIONS**	**COMPLIANCE STATUS**
A- SPECIFIC CONDITION:		
i.	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as applicable to this project.	Noted
ii.	The project proponent shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.	It shall be complied with. Shakambhari Ispat & Power Ltd. (SIPL) company is complying/in the process of complying with the environmental protection measures and safeguards in accordance to proposed documents submitted to the Ministry. The recommendations made in the EIA/EMP for environmental management, risk mitigation measures relating to new project shall be implemented with implementation of new projects.
iii.	The project proponent shall utilize modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing more than emitted. The implementation report shall be submitted to the IRO, MoEF&CC in this regard.	SIPL shall ensure to adapt best available technologies available in the market. Our efforts are/shall be to reduce the carbon foot print with best possible efforts and it is being/shall be incorporated at initial stage of project implementation and discussions with technology providers. We shall ensure the dense afforestation and its proper maintenance as a major carbon sequestration resource. In the line of reducing the carbon foot print SIPL has purchased 10 nos. of battery driven cars. As a renewable source of energy and to reduce carbon foot print, 800kwh solar panel has been installed in first phase. It shall be extended further in future.
iv.	The total proposed project land shall be converted for industrial use prior to commencement of the project.	Noted
v.	Environment Sensitive Areas near the plant premises are village Madandih at 50 meters, Gopalganj Primary school at 0.70 km and	As an environmental safeguard SIPL has already taken initiative of dense plantation to strengthen the green belt at boundary wall of the industry facing the village Madandih. Sheeting arrangement has also been made on

	Harmadih Rural Hospital at 0.58 km in East direction form the plant boundary (Ferro Division) within study area. Project Proponent shall take appropriate environmental safeguard measures to minimise the impact on the habitation of the locals. PP needs to strengthen green belt all around the plant area to reduce the dust pollution. The PP shall also include these locations in its environmental monitoring programme.	the boundary wall as barrier against any dust emission from ferro division. Plantation in Rural hospital of Harmadih and Gopalganj Primary school has been done. Additional plantation has also been done in the surrounding of Durga Mandir at Madandih village. Village Madandih is the nearest location to the plant and ambient air quality of being monitored periodically to evaluate the status. Latest Ambient air quality monitoring report is attached as **Annexure-1**
vi.	The total water requirement of 15,139 m3/day, shall be met from the DVC (13,735 m3/day) and recycled water (1,404 m3/day) after obtaining necessary permission from the Competent Authority. No ground water shall be abstrated. Efforts shall further be made to use maximum water from the rain water harvesting sources.	Noted. It shall be complied with. Company has already obtained permission from DVC and signed agreement for existing water requirement. Further water requirement shall be met from DVC with implementation of project and it shall be 13,735m3/day on completion of entire project. No ground water being/shall be abstracted. Recycle and reuse practice has been adapted to utilize the waste water generated from industrial operations.
vii.	The project proponent shall strictly implement the mitigation measures proposed to minimise the PM10 values.	It is being complied. Ambient air & fugitive emission monitoring reports are attached in **Annexure-1 & 2**
viii.	Three tier Green Belt shall be developed in at least 33% of the project area in the forthcoming monsoons of 2023 (as committed) with native species all along the periphery of the project site of adequate width and tree density shall not be less than 2500 per ha. Survival rate of green belt developed shall be monitored on periodic basis to ensure that damaged plants are replaced with new plants in the subsequent years. PP shall also develop greenbelt in the form of shelter belt comprising of total of 6 rows of 2x2 m plantation with tall trees & broad leaves with thick canopy along with windshield inside the plant premises to act as green barrier for air pollution & noise levels towards Madandih, Radhamadhabpur and Parvatpur Villages, Gopalganj Primary School and Harmadih Rural Hospital. Compliance status in this regard, shall be submitted to concerned Regional Office of the MoEF&CC.	SIPL is committed to comply with direction and efforts being made to maintain the plantation with a healthy growth and survival. Company has dedicated horticulture team to look after plantation, its growth and maintenance. In the monsoon season of 2024 plantation target was to cover the vacant land slops to prevent the scope of soil erosion and to improve the esthetic look of the project area by additional new plantation for greenbelt/green cover development and by gap filling to comply with the target of 2500 per ha. tree density covering 33% of project area, and we have planted 62,700 surviving plants of native species so far covering 25.00 ha. out of 26.76 ha. land envisaged for greenbelt development against total project land of 81.103 ha. and tree density of 2508 plants per hectare have been achieved. Remaining 1.76 ha. land shall be covered under green belt with implementation of facilities related to expansion project. Indigenous species i. e. Radhachura, Neem, Arjun, Spathodia, Banyan, Peepal, Bakul, Conocarpus, Kadam, Rain tree, Shishu, Sonajhuri, Siris, Pitanjiba, Ficus, Krishnachura Chaatim, Kanchan, Gamhar etc. have been planted. SIPL has already taken initiative to make shelter belt of by tree plantation with tall species for capable of bearing thick canopy to strengthen the green belt at boundary wall of the industry facing the village Madandih.

		Sheeting arrangement has also been made to as barrier against any dust emission from ferro division. Plantation in Rural hospital of Harmadih and Gopalganj Primary school.
ix.	All internal roads shall be black topped. The roads shall be regularly cleaned with mechanical sweepers. A 3-tier avenue plantation using native species shall be developed along the roads. Facilities for parking of trucks carrying raw coal from the linked coalmines shall be created within the Unit.	SIPL has completed concreting of approx. more than 98% internal roads where heavy vehicle movements are exercised, and concreting of balance roads are under progress. The company has completed the paver blocking of around 96% of area where heavy vehicle movements are not envisaged. Along with paver blocking company has also done the concreting of many workplace areas of the plant. Some photographs are attached as **Annexure-3** Concretization of roads and paver blocking inside the plant in expansion project area shall be undertaken with implementation of expansion project. We have already purchased automated road sweeping machine and the same is operational. Parking area for the trucks within the unit has been provided. **Annexure-4.** Avenue plantations have been developed and in the process of development of green cover using indigenous species i. e. Radhachura, Neem, Arjun, Spathodia, Bat, Peepal, Bakul, Conocarpus, Kadam, Rain tree, shishu, Sonajhuri, Siris, Pitanjiba, Ficus, Krishnachura etc. along plant roads and plant periphery as well as inside the plant. photographs are attached as **Annexure-5**
x.	All the commitments made towards socio-economic development of the nearby villages including the commitments made during the previous EC shall be satisfactorily implemented. The action plan based on the social impact assessment study of the project as per the EMP in accordance to the Ministry's OM dated 30.09.2020 amounting to Rs. 4.985Crores shall be strictly implemented and progress shall be submitted to the Regional Office of MoEF&CC.	The commitments made by SIPL related to socio economic development for the nearby villages including the commitments made during the previous EC has been implemented and progress report being submitted to Regional Office of MoEF&CC. SIPL has already taken initiative and is in the process of the implementation of the action plan based on social impact assessment and social-economic development plan for the nearby village. Our Elegant Care Foundation playing significant role for implementation of the action plan. In the line of implementation company has constructed Public Bus Stand with shelter near Madandih village at SH-5. Construction of Sri Biranchidham Cultural Centre has been completed. For Women empowerment company has started various programs for their economic growth. Company has distributed the knitting machines for making cotton hand gloves etc. in local village of Madandih, Radhamadhabpur, Parvatpur, Erakusum, Gopalganj and Harmadih. A swing training

		centre has been started for the women at village Gopalganj Development of village pond at Erakushum has been started. Solar light installation in the in the village of Madandih, Erakusum, Khuwar, Radhamadhabpur, Harmadih has been initiated. Construction of bathing ghats at the village ponds has been initiated. Some photographs related to work done are attached as **Annexure-6**
xi.	As committed PP shall adopt three villages namely: Madandih, Radhamadhabpur and Parvatpur in East direction and prepare and implement a robust plan to develop them into model villages in next three years.	SIPL has started the developmental activities in the village proposed to be adapted and it shall be implanted with due priority. Company has dedicated CSR/IR team to after the welfare and developmental activities in the surrounding of the plant. Some photographs related to work done are attached as **Annexure-6**
xii.	The recommendations of the approved Site-Specific Wildlife Management Plan shall be implemented in consultation with the State Forest Department.The implementation report shall be furnished along with the six-monthly compliance report to the concerned Regional Office of the MoEF&CC.	Wildlife conservation plan is yet to be approved from competent authority, it shall be implemented in consultation with State Forest Department and implantation report shall be submitted with six monthly compliance report to the Regional Office of the MoEF&CC.
xiii.	The ETP for Mini Blast Furnace effluent should be designed to meet Cyanide standard as notified by the MoEFCC.	Noted. It shall be incorporated in consultation with technology provider for ETP at designing stage to meet with Cyanide standard as notified by the MoEFCC. Mini Blast Furnace is yet to be installed.
xiv.	The Standards issued by the Ministry vide G.S.R. No. 277(E) dated 31st March, 2012 regarding integrated iron and steel plant shall be followed. The Standards issued by the Ministry vide G.S.R. No. 277(E) dated 31st March, 2012 regarding integrated iron and steel plant shall be followed.	It is being followed.
B-	**GENERAL CONDITIOS:**	
I-	**Statutory compliance:**	
i.	The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/Subordinate legislations, etc., as may be applicable to the project.	Noted. After getting the Environmental Clearance SIPL has obtained the Consent to Establish (CTE) from West Bengal Pollution Control Board (WBPCB) and there after implantation of 1x1000TPD Rolling mills, 1x600TPD DRI Kiln, 2x9MVA SAF, 2x25 IF have been completed and CTO obtained from State Pollution Control Board. Copy of CTE & CTO are enclosed as **Annexure-** 7
ii.	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other	Noted & agreed

	Court of Law, if any, as may be applicable to this project.	
II-	**Air quality monitoring and preservation**	
i.	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission as well as 06 Nos. Continuous Ambient Air Quality Station (CAAQMS) for monitoring AAQ parameters with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time. The CEMS and CAAQMS shall be connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	SIPL have already installed continuous emission monitoring system in all process stack and it is connected with SPCB and CPCB servers. Continuous Ambient Air Quality Station (CAAQMS) system shall be installed with the implementation project and it will be connected with SPCB and CPCB server. Stack emission status and Ambient Air Quality Monitoring being done periodically through NABL accredited laboratory to evaluate status of stack emission & Ambient Air Quality. Latest stack monitoring report & ambient air quality monitoring report is enclosed as **Annexure-8 & 1**
ii.	The project proponent shall carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area (at least at four locations one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions.	Ambient Air Quality Monitoring being carried in consideration of maximum ground level concentration of PM10, PM2.5, SO_2, and NO_x. Latest Ambient Air Quality Monitoring report is enclosed as **Annexure-1**
iii.	The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	It is being complied and monitoring report has been attached as **Annexure-2.**
iv.	Sampling facility at process stacks shall be provided as per CPCB guidelines for manual monitoring of emissions.	It is complied.
v.	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.	Air pollution control devices viz. ESPs and bag filters along with dust extraction and suppression system have been installed and efficiently operated to control emission level well within the norms. It shall also be implanted with implementation projects. Third party monitoring by NABL accredited laboratory being conducted periodically to evaluate the emission levels. Latest stack monitoring report in enclosed as **Annexure-8.**

vi.	The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.	Being/shall be complied.
vii.	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.	SIPL have already the road swiping machine for plant road. Vacuum cleaner for shop floors cleaning has also been arranged.
viii.	Ensure covered transportation and conveying of raw material to prevent spillage and dust generation. The project proponent use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.	All raw material transportation vehicle being/shall be covered with tarpaulin while transportation of raw materials to prevent any kind of spillage. Necessary instruction to the transporters has already been given in this regard.
ix.	Recycle and reuse of iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after briquetting/agglomeration.	It is being/shall be complied. Iron fines being provided to pellet plant whereas coal fines being used in CPP. SIPL shall install the briquetting and sinter plant for recycling and reuse of fines generated from the project operations.
x.	The project proponent shall provide primary and secondary fume extraction system at all heat treatment furnaces.	Fume extraction system has been installed at SMS attached with spark arrester and bag filters connected with 30-meter stack height.
xi.	Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.	SIPL has installed proper water spaying system for the control of dust emission from raw material stock piles. Wind shelter facility shall also be provided with implementation project.
xii.	Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.	It is compiled and shall also be complied with upcoming project facilities.
xiii.	Pollution control system in the plant shall be provided as per the CREP Guidelines of CPCB.	It is being/shall be complied with.
xiv.	The project proponent shall adopt the Clean Air practices like mechanical collectors, wet scrubbers, fabric filters (bag houses), electrostatic precipitators, combustion systems (thermal oxidizers), condensers, absorbers, adsorbers, and biological degradation. Controlling emissions related to transportation shall include emission controls on vehicles as well as use of cleaner fuels. Sufficient numbers of additional truck mounted Fog/Mist water cannons shall be procured and operated regularly inside the project premises and also in the surrounding villages to arrest suspended dust in the atmosphere.	SIPL has already installed de-dusting systems like bag filters and ESPs for an effective control of dust emissions. Dust extraction system has been provided at the transfer points attached with bag filter units for intermediate bin, product house etc. Dust conveying system from cooler discharge to ABC have been provided with each DRI Kiln. Wet scrubbers are provided at DRI Kiln, sufficient no. of Fixed type water sprinklers for dust suppression in raw material & product handling areas along the conveyor, finished product house area, cooler discharge, Coal Handling Plant (CHP), along with Kiln axis and all other dust prone areas. Movable water tankers have been deployed for water sprinkling and road sweeping machine for dust cleaning on the road and to minimizing fugitive emissions.

		Pollution control facilities mist water cannons suggested shall also be procured for suspended dust suppression in the plant surroundings.
xv.	Bag filters shall be cleaned regularly and efficiency of bag filter system shall be monitored at regular intervals.	Company has technically qualified team for each & every separate division for operation, maintenance & monitoring of the bag filter efficiency and other pollution control devices on regular basis.
xvi.	Water Sprinklers/Water mist system shall be installed near raw material yards, operational units and other strategic locations to control fugitive emissions from the plant.	SIPL has installed sufficient no. of water sprinklers for proper water spaying to control dust emission from raw material yard, operational units and other dust prone areas. It is being/shall also be implemented for expansion project.
xvii.	The particulate matter emissions from the process stacks shall be less than 30 mg/Nm3 and measures shall be undertaken as per the submitted action plan. Efficient Air monitoring equipment shall be installed.	It shall be complied with under implementation and to be implemented projects. Already installed (existing) projects complies with emission standards as stipulated in previous EC and in CTO by West Bengal Pollution Control Board.
xviii.	Following additional arrangements to control fugitive dust shall be provided: a. Fog / Mist Sprinklers at all on bulk raw material storage area (at the transfer points) like Iron Ore, Coal and for Fly Ash and similar solid waste storage areas. b. Proper covered vehicle shall be used while transport of materials. c. Wheel washing mechanism shall be provided in entry and exit gates with complete recirculation system.	Sufficient no. of Fixed type water sprinklers for dust suppression in raw material & product handling areas along the conveyor, finished product house area, cooler discharge, Coal Handling Plant (CHP), along with Kiln axis Coal, Iron Ore, Fly Ash handling area and all other dust prone areas. Installation of Fog/mist sprinklers shall also be done in existing & units with expansion project at required points. Materials being transported in covered vehicle. Wheel washing mechanism with complete recirculation system shall be provided at suitable location as per directions
xix.	Briquetting and Jigging plant shall be installed in Ferro Alloys Plant.	Noted. Jigging plant has been installed and efficiently operated.
xx.	The PP shall minimize the evaporation losses in jigging operation to less than 10% using suitable advanced process.	Noted. Recycle and reuse practice has been adapted to minimize the water consumption. Waste water generated from cooling tower blowdown and softener back wash being used for jigging operation.
xxi.	The 4th hole extraction system shall be provided in the Sub Merged Arc Furnaces and EAF.	It is provided with existing SAFs and shall also be provided with upcoming installation of SAF.
xxii.	Industry is going to use silica quartz in large quantities and going to produce Silico Manganese and Ferro Silicon alloy steel. Therefore, it is necessary to control silica/quartz exposures at production Departments, not only emission norms as per Indian Factories Act. The permissible limit for silica/quartz should be within 10 mg/m3 for	Noted. Personnel's working for the production of Silico Manganese and Ferro Silicon being provided the PPEs like dust masks eyes safety goggles as protective measures. It has been monitored as per direction and Indian Factories Act and results are found within the norms. Latest analysis report is attached in **Annexure No-9**

	total dust as per Indian Factories Act. Therefore, it is recommended to monitor personal and area exposures for silica quartz dust in the process plants.	
xxiii.	No Ferro-chrome production shall be carried out without prior Environmental clearance from MOEF&CC.	Noted. SIPL has already obtained permission from MoEF&CC for the production High Carbon Ferro-chrome. Production shall be done in accordance to the permission granted.
xxiv.	Hoppers of the coal crushing unit and other washery units shall be fitted with high efficiency bag filters/mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of closed belt conveyor systems and from transportation roads.	SIPL has already installed hoppers and closed conveyor system at coal handling plant with efficient bag filters/water sprinkling system with coal crushing units and operated effectively. Regular monitoring being/shall be done and immediate action shall be taken for any abnormality noticed.
xxv.	The raw coal, washed coal and coal wastes (rejects) shall be stacked properly at earmarked site (s) within stockyards fitted with wind breakers/shields. Adequate measures shall be taken to ensure that the stored mineral does not catch fire.	All rejected raw coal (raw coal, washed coal and coal wastes) from coal washery will be stored designated place with wind breakers/shields, with fire protection measures for further use in CPP. SIPL has coal sheds for storage of coal being used in different operations i.e. DRI, CPP & SAF. All the coal fines and rejects being used in CPP for power generation.
xxvi.	The temporary reject sites should appropriate planned and designed to avoid air and water pollution from such sites.	Noted. It shall be complied. There is no any temporary reject site therefore, air and water pollution from such sites not envisaged.
xxvii.	During operational phase at Captive Power Plant, Action Plan to monitor coke/coal dust exposures in different process plants using personal and area air samplers and to compare with permissible limits as per Indian Factories Act, 1948 shall be implemented.	Company has engaged third party monitoring for check the level of fugitive emissions. Latest fugitive monitoring report are enclosed as **Annexure-2.** Necessary PPEs being provided to working manpower in this area.
xxviii.	The coal dust should be monitored at coal unloading, crushing, furnace areas and should be within 2 mg/m3, respirable dust fraction containing less than 5% quartz as per Indian Factories Act, 1948.	It shall be complied as per directions. Latest fugitive monitoring report are enclosed as **Annexure-2.**
xxix.	Online stack monitoring system for IF and RHF shall be installed and monitoring report shall be submitted to the concerned Regional Office of the MoEF&CC along with the six-monthly compliance report.	It shall be complied. Stack monitoring report for SMS (IF) is attached with **Annexure-8.**
xxx.	Low NOx Burners will be installed at Reheating Furnace for control of Gaseous emissions generated while using PNG.	Noted. It shall be incorporated during implementation of Reheating Furnace. As such no Reheating Furnace is installed.

III-	**Water quality monitoring and preservation**	
i.	The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time and connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	Noted. It shall be complied. ETP installed at rolling mill is totally based on recirculation system. Treated effluent being recycled and reused. No industrial waste water being discharged out side the factory premises.
ii.	The project proponent shall monitor regularly ground water quality at least twice a year (pre and post-monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited laboratories.	Ground water quality being monitored regularly twice in a year by authorized NABL accredited laboratory. Ground water quality Monitoring report are enclosed as **Annexure-10A**
iii.	Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off.	It shall be complied as per directions. Recycle and reuse practice has been adapted for effective utilization of industrial waste water through catch pits.
iv.	Water meters shall be provided at the inlet to all unit processes in the plants.	SIPL has provided the water meter to assess the water utilization by individual units of operation, lacking if any shall be evaluated and ensured to be complied. It shall also be implemented with expansion project.
v.	The project proponent shall make efforts to minimise water consumption in the plant complex by segregation of used water, practicing cascade use and by recycling treated water.	Regular monitoring being done. Recycle and reuse practice have been adapted and no effluent discharged outside the factory premises. Efforts being/shall be made to minimise the water intake through maximum recycle and reuse practices.
vi.	The proposed project shall be designed as "Zero Liquid Discharge" Plant. ETP shall be installed and there shall be no discharge of effluent from the plant. Domestic effluent shall be treated in Sewage Treatment Plant. Suitable measures shall be adopted for sewage water handling to ensure no contamination of any kind of water body.	Recycle and reuse practice has been adapted and no effluent being/shall be discharged outside the factory premises. Waste water generated from units being taken in to equalization/homogenization tanks and reused for slag quenching, dust suppression, ash conditioning, bed ash cooling and in metal recovery plant within the factory premises. Latest Industrial Effluent Water analysis are enclosed as **Annexure-10B.** For the treatment of domestic effluent septic tank followed by soak pit facilities have been provided. STP shall be installed with implementation of expansion projects.
vii.	All stock yards shall have impervious flooring and shall be equipped with water spray system for dust suppression. Stock yards shall also have garland	Flooring work of stock yards are almost completed and it shall extended up to expansion project. Water spray system for dust suppression has been/will be installed

	drains and catch pits to trap the run off material and shall be implemented as per the action plan submitted in EIA/EMP report.	with implementation of new project. Garland drains and catch pits shall be made to trap the run off material in the stock yards.
viii.	Rain water harvesting shall be implemented to recharge/harvest water as per the action plan submitted in the EIA/EMP report.	As per action plan submit in EIA/EMP report SIPL shall implement the Rain water harvesting to harvest the rain water.
ix.	The project proponent shall provide the ETP for effluents of rolling mills to meet the standards prescribed in G.S.R 277 (E) 31st March 2012 (applicable to IF/EAF) as amended from time to time.	It is being followed. ETP has been installed for effluent treatment at rolling mills. Latest analysis report is enclosed as **Annexure-10B.**
x.	The project proponent shall provide appropriate ETP for effluents discharged from coke oven and by-product to meet the standards prescribed in G.S.R 277 (E) 31st March 2012 (applicable to Coke oven plants) as amended from time to time.	SIPL has no proposal for installation of coke oven plant, hence there is /shall be no scope of effluent discharge from coke oven.
xi.	Treated water from ETP of COBP shall not be used for coke quenching.	
xii.	The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.	It is being followed. Waste water generated from floor washings, boiler & cooling tower blowdowns, back wash from softener plant etc. being taken to equalization/homogenization tanks/catch pits and recycled and reused for cooling purposes, dust suppression, ash conditioning, bed ash cooling and slag quenching. No industrial waste water being discharged outside the factory premises.
xiii.	Heavy metal content in raw coal and washed coal shall be analysed once in a year and records maintained thereof.	It shall be complied. Installation of coal washery not started yet.
xiv.	The rejects should preferably be utilized in FBC power plant or disposed off through sale for its gainful utilization. If the coal washery rejects are to be disposed off, it should be done in a safe and sustainable manner with adequate compaction and post closure arrangement to avoid water pollution due to leachate from rejects and surface run of from reject dumping sites.	Rejected coal fines being/will be utilized in CPP and iron fines being sent its BSIPL unit for use in pellet plant. Disposal of such waste shall be ensured and complied as per direction to prevent any kind of water pollution. Installation of coal washery not started yet.
xv.	An Integrated Surface Water Management Plan for the washery area up to its buffer zone considering the presence of any river/rivulet/pond/lake etc. with impact of coal washing activities on it, shall	It shall be complied with installation coal washery unit.

	be prepared, submitted to MoEFCC and implemented.	
xvi.	Waste Water shall be effectively treated and recycled completely either for washery operations or maintenance of green belt around the plant.	After installation of coal washery, waste water generated from coal washery unit will be recycle in waste treatment plant and it will also be utilized in green belt development as per requirement.
xvii.	Rainwater harvesting in the washery premises shall be implemented for conservation and augmentation of ground water resources in consultation with Central Ground Water Board.	It shall be complied after implementation of washery project.
xviii.	No ground water shall be used for coal washing unless otherwise permitted in writing by competent authority (CGWA) or MoEFCC. The make-up water requirement of washery should not exceed 1.5 m3/tonne of raw coal.	Noted. It shall be complied with.
xix.	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.	This condition is not applicable for SIPL because there is no lease mines available with the company.
xx.	The project proponent shall take all precautionary measures to ensure riverine/ riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.	This condition is not applicable for SIPL
xxi.	Air Cooled condensers shall be used in the captive power plant.	It is being complied. Air Cooled condensers are used in captive power plant and it shall also be complied with all new installations of captive power generation units.
xxii.	Tailing management plan shall be implemented as included in EIA report.	As per EIA report, tailing management plan will be implemented with installation of iron ore bonification plant.
xxiii.	Tailings from Iron Ore beneficiation plant shall be dewatered in filter press and no slime /tailing pond shall be permitted.	It shall be followed after implementation of the project.
IV-	**Noise monitoring and prevention**	
i.	Noise pollution shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and amendments thereof, and report in this regard shall be submitted to Regional	Monitoring of noise pollution being done on regular basis and report are submitted along with six-month compliance report to Regional Officer of the Ministry. Latest Ambient Noise Monitoring report are enclosed

	Officer of the Ministry as a part of six-monthly compliance report.	as **Annexure-11A**
ii.	The ambient noise levels should conform to the standards prescribed under E(P)A Rules,1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	Noted. Latest Ambient Noise Monitoring report are enclosed as **Annexure-11A**
iii.	PP shall identify extreme hot areas through heat stress survey as well as noise monitoring within process plants to ensure that workers not exposed above 90 dBA levels as per Factories Act,1948.	Heat stress analysis report is enclosed as **Annexure- 12** Personnel working near noise generating source being provided the ear plug ear muff and for hot zone apron, hand glove, eye goggles and face shield as PPE.
V-	**Energy Conservation measures**	
i.	Use torpedo ladle for hot metal transfer as far as possible. If ladles not used, provide covers for open top ladles.	The top of the ladles used for metal transfer in SMS being covered with redex powder to prevent the heat loss. Molten metal is kept below top allowance level in the ladle for safe handling & and transfer.
ii.	Restrict Gas flaring to < 1%.	It shall be complied with operation of blast furnace.
iii.	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;	As a renewable source of energy and to reduce carbon foot print, 800kwh solar panel has been installed in first phase. It shall be extended further in future.
iv.	Provide LED lights in their offices and residential areas.	It has been/shall be complied.
v.	The project proponent shall provide waste heat recovery system (pre-heating of combustion air) at the flue gases of reheating furnaces.	Company has already implemented and installed WHRB (waste heat recovery boilers) with DRIs for better utilization of waste heat for power generation.
vi.	Practice hot charging of slabs and billets/blooms as far as possible.	It is being followed.
vii.	Ensure installation of regenerative type burners on all reheating furnaces.	SIPL shall adopt latest technology of burners and it will be implemented in all reheating furnaces.
viii.	Blast Furnaces shall be equipped with Top Recovery Turbine, dry gas cleaning plant, stove waste heat recovery, cast house and stock house ventilation system and slag granulation facility.	It shall be complied with installation of blast furnace.
ix.	Coke Dry Quenching (CDQ) shall be provided for coke quenching for both recovery and nonrecovery type coke ovens.	It is not applicable to SIPL as coke oven plant is not under proposal.
x.	The project proponent shall provide waste heat recovery system on the DRI Kilns.	It is already provided and installed with all DRI kilns.

xi.	The dolochar generated shall be used for power generation.	Dolochar generated from DRI plant being utilized in CPP plant as a Raw material of the power plant for captive power generation.
xii.	Tar shall be recovered from producer gas and shall be sold to registered processors and phenolic water shall be incinerated in After Burn Chamber (ABC) of DRI kilns.	Noted. It shall be complied.
xiii.	The PP shall implement the guidelines on sponge iron plants issued by the CPCB/SPCB in this regard.	Noted. It is being/shall be complied.
VI-	**Waste management**	
i.	Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil.	It is being/shall be complied for collection of spillage oil for further recycle/reuse.
ii.	Kitchen waste shall be composted or converted to biogas for further use.	It is being/shall be complied.
iii.	100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.	It is being followed. All the fly ash generated within the plant is provided to brick manufacturers for further utilization. Accordingly, company has made agreement for the same. Company has permission from Eastern Coalfields Limited (ECL) for filling the illegally mined place at Bicched Bandh area near Narsamunda Colliery of Sodepur area. Copy of the agreement and permission are enclosed as **Annexure-13**
iv.	The Plastic Waste Management Rules 2016, inter-alia, mandated banning of identified Single Use Plastic (SUP) items with effect from 01/07/2022. In this regard, CPCB has issued a direction to all the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) on 30/06/2022 to ensure the compliance of Notification published by Ministry on 12/08/2021. The technical guidelines issued by the CPCB in this regard is available at https://cpcb.nic.in/technical-guidelines-3/. All the project proponents are hereby requested to sensitize and create awareness among people working within the Project area as well as its surrounding area on the ban of SUP in order to ensure the compliance of Notification published by this Ministry on 12/08/2021. A report, along with photographs, on the measures taken shall also be included in the six-monthly compliance report being submitted by the project proponents.	Noted. It is being/shall be complied. Use of single use plastic is completely banned inside the plant premises. Our EHS personnel are regularly creating awareness among people working within the factory premises to avoid the Single Use Plastic (SUP) items. Further campaigning against SUP shall be conducted for more effective compliance of guidelines and Notification dated 12/08/2021 of the Hon'ble Ministry.

v.	A proper action plan must be implemented to dispose of the electronic waste generated in the industry.	Electronic waste generated being disposed of through authorized vendor.
vi.	Solid waste utilization- a. PP shall install a slag crusher to convert steel slag into aggregate for use in construction industry, fine sand for use as flux in steel plant, sand in brick making and as lime in cement making. b. PP shall recycle/reuse solid waste generated in the plant as far as possible. c. Used refractories shall be recycled as far as possible.	Slag generated from induction furnace being used for road making purpose and land filling after metal recovery. Ferro manganese slag being used for silico-manganese production and silico manganese slag used as aggregate. Used refractories being sold to its recyclers and also reused within the plant as for as possible. Fly ash being provided to brick and cement manufactures. Company has also got permission from Eastern Coalfields Limited (ECL) for filling the illegally mined place at Bicched Bandh area near Narsamunda Colliery of Sodepur area.
vii.	SMS slag after metal recovery in waste recycling facility shall be conditioned and used for road making, railway track ballast and other applications. The project proponent shall install a waste recycling facility to recover metallic and flux for recycle to sinter plant. The project proponent shall establish linkage for 100% reuse of rejects from Waste Recycling Plant.	Slag generated from SMS being used for road making purpose and land filling after metal recovery.
viii.	Carbon recovery plant to recover the elemental carbon present in GCP slurries for use in Sinter plant shall be installed.	It shall be complied. GCP dust shall be used in sinter plant upon implementation.
ix.	Waste recycling Plant shall be installed to recover scrap, metallic and flux for recycling to sinter plant and SMS.	All metallic waste like metallic scrap and flux recovered from slag being/will be reused in SMS plant.
x.	In case of Non-Recovery coke ovens, the gas main carrying hot flue gases to the boiler, shall be insulated to conserve heat and to maximise heat recovery.	This condition is not applicable to SIPL because Coke Oven plant is not the part of project proposal.
xi.	Tar Sludge and waste oil shall be blended with coal charged in coke ovens (applicable only to recovery type coke ovens).	Noted. It shall be complied.
xii.	Rejects from coal washery shall only be used either in the captive power plant (or) in the Thermal Power Plants meeting emission standards.	Rejects from coal washery will be utilized in CPP plant for power generation. Coal washery project is not installed yet.
VII-	**Green Belt**	
i.	The project proponent shall prepare GHG emissions inventory for the plant and shall submit	SIPL has prepared GHG emission inventory and reduction of the same including carbon sequestration by

	the programme for reduction of the same including carbon sequestration by trees.	trees. Attached as **Annexure-14**
ii.	Project proponent shall submit a study report on Decarbonisation program, which would essentially consist of company's carbon emissions, carbon budgeting/ balancing, carbon sequestration activities and carbon capture, use and storage and offsetting strategies. Further, the report shall also contain time bound action plan to reduce its carbon intensity of its operations and supply chains, energy transition pathway from fossil fuels to Renewable energy etc. All these activities/ assessments should be measurable and monitor able with defined time frames.	It shall be complied. Carbon Footprint & Carbon Sequestration report of SIPL has been prepared and attached as **Annexure-14**
iii.	Greening and Paving shall be implemented in the plant area to arrest soil erosion and dust pollution from exposed soil surface.	SIPL has completed concreting of approx. more than 98% internal roads where heavy vehicle movements are exercised, and concreting of balance roads are under progress. The company has completed the paver blocking of around 96% of area where heavy vehicle movements are not envisaged. Along with paver blocking company has also done the concreting of many workplace areas of the plant. Some photographs are attached as **Annexure-3** Concretization of roads and paver blocking inside the plant in expansion project area shall be undertaken with implementation of expansion project for prevention and control of soil erosion. Greening of the plant area is also taken as drive of greenbelt & green cover development program and it shall be continued. Green belt photographs are enclosed as **Annexure-5**
VIII-	**Public hearing and Human health issues**	
i.	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Complied. It is already been submitted.
ii.	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms.	Heat stress analysis report is enclosed as **Annexure-12** Personnel working near noise generating source being provided the ear plug ear muff and for hot zone apron, hand glove, eye goggles and face shield as PPE.
iii.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP. Safe drinking water, medical health care, creche etc. The	It is being/shall be complied.

	housing may be in the form of temporary structures to be removed after the completion of the project.	
iv.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained.	Occupational health surveillance of the workers being done on regular basis and records maintained. Health checkup report is enclosed as **Annexure-15**
IX-	**Environment Management**	
i.	The project proponent shall comply with the provisions contained in this Ministry's OM vide F. No. 22-65/2017-IA.III dated 30/09/2020. As part of Corporate Environment Responsibility (CER) activity, company shall adopt nearby villages based on the socio-economic survey and undertake community developmental activities in consultation with the village Panchayat and the District Administration as committed.	Noted, It shall be complied. Company has already started implementation of developmental activities as a part of Corporate Environment Responsibility (CER) activity in the nearby villages. Some photographs are attached as **Annexur-6**
ii.	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	Complied. It is already been submitted. Corporate Environmental Policy is attached as **Annexure-16**
iii.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	An environmental cell has been set up under the supervision of Senior Executive of GM level to look after the day to day activities pertaining to environment & pollution control issues of the company.
iv.	Performance test shall be conducted on all pollution control systems every year and report shall be submitted to Integrated Regional Office of the MoEF&CC.	It being/shall be complied. NABL accredited third party monitoring being conducted periodically to evaluate the emission level of pollution control systems i.e. ESPs and bag filters. Latest Stack monitoring reports is enclosed as **Annexure-8**
X-	**Miscellaneous**	
i.	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or	It has been complied. Advertisement in two local newspapers is attached as **Anneure-17**

	State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	
ii.	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	It has been complied.
iii.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	It is being complied. Compliance status being periodically uploaded on the company website http://shakambhariispat.com/environmental-compliance
iv.	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	Monitoring of criteria pollutants around the plant premises along with pollutants level namely; PM10, S02, NOX being displayed at main gate of the plant and it shall also be uploaded in company's website http://shakambhariispat.com/environmentalcompliance under Half yearly compliance report as per direction. Ambient Air & Stack Monitoring reports are enclosed as **Annexure-1 & Annexure-8** Environmental parameter monitored has been displayed at the entrance of the company main gate in the public domain. Attached as **Annexure –18**
v.	Action plan for developing connecting and internal road in terms of MSA as per IRC guidelines shall be implemented.	Internal plant roads are made keeping in view the abstractions free movement within the plant premises. MSA as per IRC guidelines being/shall be implemented and followed with implementation projects.
vi.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	Noted. It shall be complied. Six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data being submitted to IRO on regular basis.
vii.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	Being complied. The environment statement (Form-V) for Financial Year 2023-24 has already been submitted to WBPCB with copy to Integrated Regional Office of the MOEF&CC, Kolkata. The report is uploaded on the company's website as per direction.
viii.	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the	After obtaining CTE (NOC) vide no. NO 180762 dated 18.08.2023 from company has started the project activities w.e.f. 21.08.2023. Copy of CTE attached as

	concerned authorities, commencing the land development work and start of production operation by the project.	**Annexure-7 F**inancial closure of the project shall be communicated submitted as per direction.
ix.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Noted. Company is in the process of implementation of the commitments and recommendations made in EIA /EMP report, commitments made during the Public Hearing and also that during presentation to the Expert Appraisal Committee. It shall be complied as per the commitments.
x.	The recommendations of the approved Site-Specific Wildlife Management Plan (in case of involvement of Schedule-I species) shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report to the concerned Regional Office of the MoEF&CC.	Noted. It shall be complied. Wildlife conservation plan is yet to be approved from competent authority, it shall be implemented in consultation with State Forest Department and implantation report shall be submitted with six monthly compliance report to the Regional Office of the MoEF&CC.
xi.	The PP shall put all the environment related expenditure, expenditure related to Action Plan on the PH issues, and other commitments made in the EIA/EMP Report etc. in the company web site for the information to public/public domain. The PP shall also put the information on the left-over funds allocated to EMP and PH as committed in the earlier ECs and shall be carried out and spent in next three years, in the company web site for the information to public/public domain.	Noted, it shall be complied as per directions.
xii.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	Noted and agreed.
xiii.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Noted.
xiv.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Noted.
xv.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Noted.

xvi.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.	It is being complied. SIPL extend full cooperation to the officer (s) of the Regional Office and furnish the requisite data / information/monitoring reports.
xvii.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted.

EC F. No. J-11011/201/2013-IA II (I) Date: 21.12.2016 and EC amendment dated 29.04.2020		
Sl. No.	**CONDITIONS**	**COMPLIANCE STATUS**
SPECIFIC CONDITION:		
i.	The project proponent shall install 24x7 air monitoring devices to monitor air emissions, as provided by the CPCB and submit report to Ministry and its Regional Office	24x7 Online Continuous Emission Monitoring System (OCEMS) have been installed with all major stacks of DRI, CPP & Ferro Division and connected to CPCB portal to monitor the air emissions. Latest stack monitoring report is attached as **Annexure-8.**
ii.	No dumping is permitted in the abandoned coal mines 2B and 2C in nearby Parbelia Village. The iron ore trailing and excess ash should be stored within the plant premises for the period of 2 years for which land is available. The status of storage of above material shall be periodically reviewed by the regional office for land adequacy and environmental management. For future storage of iron ore tailing and excess ash, beyond the period of 2 years, the proponent will submit the land acquisition details to the Ministry.	It is being complied. No dumping being done in the abandoned coal mines 2B and 2C nearby Parbelia village. Iron ore beneficiation plant has not been installed so far. Therefore, Iron ore tailings storage facility is not envisaged at this stage.
iii.	In-plant control measures like bag filters, de-dusting and dust suppression system shall be provided to control fugitive emissions from all the vulnerable sources. Dust extraction and suppression system shall be provided at all the transfer points, coal handling plant etc. Bag filters shall be provided to hoods and dust collectors to coal and coke handling to control the dust emissions. Water sprinkling system shall be provided to control secondary fugitive dust emissions generated during screening, loading, unloading, handling and storage of raw materials etc.	SIPL has already installed de-dusting systems like bag filters and ESPs for an effective control of dust emissions. Dust extraction system has been provided at the transfer points points attached with bag filter units for cooler discharge, intermediate bin, product house etc. Dust conveying system from cooler discharge to ABC have been provided with each DRI Kiln., Fixed type water sprinklers for dust suppression in raw material & product handling areas along the conveyor, finished product house area, cooler discharge, Coal Handling Plant (CHP), along with Kiln axis and all other dust prone locations. SIPL have deployed movable water tankers and road sweeping machine for dust cleaning on the road and minimizing fugitive emissions. Latest fugitive emissions monitoring report is attached as **Annexure-2**
iv.	The ETP for Mini Blast Furnace effluent should be designed to meet Cyanide standard as notified by the MoEF&CC.	It shall be complied. No Mini Blast Furnace has been installed so far.
v.	No effluent shall be discharged outside the plant premises and 'zero' discharge shall be adopted.	Recycle and reuse practice has been adapted and no effluent being discharged outside the factory premises.
vi.	Continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz. Electrostatic precipitator (ESP), bag house, bag filters etc. shall be provided to keep the emission levels	Online Continuous Emission Monitoring System (OCEMS) have been installed at process Stacks of DRI, CPP and Ferro unit. Air pollution control devices viz. ESPs and bag filters along with dust extraction and suppression system have been

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Sl. No.	**CONDITIONS**	**COMPLIANCE STATUS**
	below 50 mg/Nm3 and installing energy efficient technology.	installed and efficiently operated to control emission level well within the norms. Third party monitoring by NABL accredited laboratory being conducted periodically to evaluate the emission levels. Latest stack monitoring report in enclosed as **Annexure-8**
vii.	Hot gases from DRI kiln shall be passed through Dust Settling Chamber (DSC) to remove coarse solids and After Burning Chamber (ABC) to burn CO completely. The gas then shall be cleaned in ESP before leaving out into the atmosphere through ID fan and stack.	Hot gases from DRI Kiln being passed through Dust Settling Chamber (DSC) to remove coarse solids and After Burning Chamber (ABC) for complete burning of CO. The dust content from gas being separated by ESP and cleaned gas discharged through stack.
viii.	Efforts shall further be made to use maximum water from the rain water harvesting sources. Use of air cooled condensers shall be explored and closed circuit cooling system shall be provided to reduce water consumption and water requirement shall be modified accordingly. All the effluent should be treated and used for ash handling, dust suppression and green belt development. ETP sludge should be disposed off scientifically.	All possible attempts are made to ensure optimal use of water. We have rain water harvesting pond to harvest the rain water and reduce the water consumption. Air cooled condensers and closed-circuit cooling system have been provided with CFBC boiler to reduce water consumption. Cooling water in DRI, SMS and Rolling Mill are recycled back to the system. Roiling mill effluent being treated in ETP and recycled back to the process. Sludge generated from ETP being utilized in SAF/given to pellet making plant for manufacturing of iron ore pellet. Cooling tower blowdown and softener/DM plant rejects being taken into neutralization/homogenization tanks and utilized for dust suppression, ash handling and for sprinkling on road to control fugitive dust emissions.
ix.	All the coal fines, char from DRI plant shall be utilized and no char shall be used for briquette making or disposed off anywhere else. All the other solid waste including broken refractory mass shall be properly disposed off in environment-friendly manner.	It is being complied. All the coal fines and the char generated from DRI plant being strictly utilized in Captive Power Plant (CPP). Other solid waste like broken refractory etc. being sold to it recyclers.
x.	All internal roads shall be black topped. The roads shall be regularly cleaned with mechanical sweepers. A 3-tier avenue plantation using native species shall be developed along the roads. Facilities for parking of trucks carrying raw coal from the linked coalmines shall be created within the Unit.	SIPL has completed concreting of All internal roads where heavy vehicle movements are exercised. The company has completed the paver blocking of around 98 % of area where heavy vehicle movements are not envisaged. Along with paver blocking company has also done the concreting of many workplace areas of the plant. Some photographs are attached as **Annexure-3** We have already purchased automated road sweeping machine and the same is operational. Parking area for the trucks within the unit has been provided. **Annexure-4.** Progressive measures have being taken to develop avenue plantation and green cover using indigenous species i. e. Radhachura, Neem, Arjun, Seshoda, e

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		Banyan, Peepal, Bakul, Conocarpus, Kadam, Rain tree, shishu, Sonajhuri, Siris, Pitanjiba, Ficus, Krishnachura Kanchan, Gamhar etc. along the plant road and periphery as well as inside the plant. Some pictures are attached as **Annexure-5**
xi.	The Standards issued by the Ministry vide G.S.R. No. 277(E) dated 31st March, 2012 regarding integrated iron and steel plant shall be followed.	It is being followed.
xii.	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed.	It is being followed. Latest Ambient Air Quality Monitoring report is attached as **Annexure-1**
xiii.	Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the latest permissible limits issued by the Ministry vide G.S.R. 414(E) dated 30th May, 2008 and regularly monitored. Guidelines / Code of Practice issued by the CPCB shall be followed.	Utmost priority is given to reduce the air pollution within the plant. Efficient operating control measures have been undertaken to keep gaseous emission including secondary fugitive emissions level within the latest permissible limits. Last work zone (Fugitive Emission) monitoring report is enclosed as **Annexure-2**
xiv.	Regular monitoring of influent and effluent surface, sub- surface and ground water shall be ensured and treated wastewater shall meet the norms prescribed by the State Pollution Control Board or described under the Environment (Protection) Act, 1986 whichever are more Stringent.	Regular monitoring being done. Recycle and reuse practice has been adapted and no effluent being discharged outside the factory premises. Latest monitoring report of Effluent water, Surface water and Ground water is enclosed as **Annexure-10B,10C & 10A.**
xv.	Proper handling, storage, utilization and disposal of all the solid waste shall be ensured and regular report regarding toxic metal content in the waste material and its composition, end use of solid/hazardous waste shall be submitted to the Ministry's Regional Office, SPCB and CPCB.	Proper handling, storage, utilization and disposal of solid waste being done. Analysis of toxic metal content in the solid waste being periodically carried out by approved agency. The monitoring report by NABL accredited laboratory is enclosed as **Annexure- 19**
xvi.	A time bound action plan shall be submitted to reduce solid waste generated due to the project related activity, its proper utilization and disposal.	It is complied. Solid waste generated from project activities are properly utilized at plant site. Excavated good soil being used for greenbelt development and remaining soil for backfilling. Old structural if any, are utilized in SMS and re-melted in induction furnace. Civil debris are used for road making/concretization of shop floors.
xvii.	Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 1999 and subsequent amendments. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding shall be submitted to the Ministry's Regional Office.	All the fly ash generated within the plant is provided to brick manufacturers for further utilization. Accordingly, company has made agreement for the same. Company has also got permission from Eastern Coalfields Limited (ECL) for filling the illegally mined place at Bicched Bandh area near Narsamunda Colliery of Sodepur area. Copy of the agreement is enclosed as **Annexure-13**

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Sl. No.	**CONDITIONS**	**COMPLIANCE STATUS**
xviii.	A Risk and Disaster Management Plan shall be prepared and a copy submitted to the Ministry's Regional Office, SPCB and CPCB within 3 months of issue of environment clearance letter.	Complied. It is already been submitted.
xix.	Green belt shall be developed in at least 33% of the project area by planting native and broad leaved species in consultation with local DFO and local communities as per the CPCB guidelines.	SIPL has achieved the target of green belt plantations in 33% area of the plant i.e. 23.66ha out of 71.7ha land of existing project area with tree density of approx. 2508 trees/ha. by gap filling and scoping the new plantation by 30.09.2024. Company has taken extensive plantation drive by using indigenous species i. e. Radhachura, Neem, Arjun, Spthodia, Banyan, Peepal, Bakul, Conocarpus, Kadam, Rain tree, shishu, Sonajhuri, Siris, Pitanjiba, Ficus, Krishnachura etc. along the plant roadside, periphery as well as inside the plant according to recommendation from DFO and species of local growing species
xx.	All the commitments made to the public during Public Hearing/public consultation meeting shall be satisfactorily implemented and adequate budget provision shall be made accordingly.	It is compiled/being complied. In accordance to the compliance of commitments made during public hearing and an additional requirement made by the local people time to time., various CSR activities have been undertaken by SIPL for the benefit of local community of nearby villages i.e. Distribution of blanket, winter dresses for local needy villagers. Drinking water to the nearby villagers, free medical camps for needy people, providing study material to the school students and also arrange the sitting facilities to the school students, repairing & coloring of school building, food grains distribution to acute malnourished community, distribution of food materials during COVID situations and afterward it is still continued for the welfare weaker section of nearby village communities, monetary support to the surrounding villagers for varies cultural program etc. Some photographs of activities attached as **Annexure-6** We have dedicated CSR team to look after the welfare activities and redressing of issues if any.
xxi.	At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues, locals need and item- wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office. Implementation of such program shall be ensured by constituting a Committee comprising of the proponent, representatives of village Panchayat and District Administration. Action taken reporting this	It has been complied. Details of the public hearing issues and various activities undertaken along with other need-based CSR activities attached as **Annexure-6**

EC F. No. J-11011/201/2013-IA II (I) Date: 21.12.2016 and EC amendment dated 29.04.2020		
Sl. No.	**CONDITIONS**	**COMPLIANCE STATUS**
	regard shall be submitted to the Ministry's Regional Office.	
xxii.	The proponent shall prepare a detailed CSR Plan for every year for the next 5 years for the existing-cum- expansion project, which includes village-wise, sector- wise (Health, Education, Sanitation, Health, Skill Development and infrastructure requirements such as strengthening of village roads, avenue plantation, etc) activities in consultation with the local communities and administration. The CSR Plan will include the amount of 2% retain annual profits as provided for in Clause 135 of the Companies Act, 2013 which provides for 2% of the average net profits of previous 3 years towards CSR activities for life of the project. A separate budget head shall be created and the annual capital and revenue expenditure on various activities of the Plan shall be submitted as part of the Compliance Report to RO. The details of the CSR Plan shall also be uploaded on the company website and shall also be provided in the Annual Report of the company.	SIPL have undertaken various social activities in nearby villages in consultation with local communities for their benefit of health, education, cultural activities, skill development and employment to local people etc. Our expenditures are incurred primarily towards supporting education, health for the benefit of local community such as repairing and renovating of old schools in local villages developing of furnished classrooms, facilitating study materials and utilities and providing support to the Harmadih hospital by drinking water arrangements, oxygen cylinders, illumination of hospital premises, blanket and winter wear distribution to the nearby villagers, construction of public toilets, construction of Temples and Prayer Halls on demand of the local communities etc. In addition to the above, further our primary objective is the Skill development of the local youth and strengthening employability, also making self-help of women for their economic improvements, development of tailoring skill among the local women through company owned tailoring center. Our HR & IR and CSR team personnel to look after the welfare activities and redressing of issues if any. The SIPL has varieties of CSR activities with its Elegant-Foundation. As a part of CSR, we have distributed nutrition kits containing rice, dal and edible oils to less privileged people. Some photographs of CSR activity are attached as **Annexure-6**
xxiii.	The Company shall submit within three months their policy towards Corporate Environment Responsibility which shall inter-alia address (i) Standard operating process/procedure to being into focus any infringement/deviation/ violation of environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance to the environmental clearance conditions and (iii) System of reporting of noncompliance/ violation environmental norms to the Board of Directors of the company and/or stakeholders or shareholders.	Complied. SIPL have implemented standard operating procedure to look into any infringement/ deviation/violation of environmental or forest norms/conditions. SIPL have also the Hierarchical system/ Administrative order to deal with environmental issues and compliance of EC conditions. SIPL have in placed reporting system for non – compliance / violation of environmental norms. Board of Directors 

EC F. No. J-11011/201/2013-IA II (I) Date: 21.12.2016 and EC amendment dated 29.04.2020		
Sl. No.	**CONDITIONS**	**COMPLIANCE STATUS**
		Corporate Environment Policy of the company is attached as **Annexure-16**
xxiv.	The project proponent shall provide for solar light system for all common areas, street lights, villages, parking around project area and maintain the same regularly.	It is complied Solar lighting system have been installed in the village Radhamadhabpur & Erakusum on roads side near Kali Mandir and it is being maintained regularly. It is also initiated in the village of Madandih, Khuwar, Harmadih.
xxv.	The project proponent shall provide for LED lights in their offices and residential areas.	Complied. Energy conservation measure has already been adapted by providing LED lights in the offices to minimization of energy consumption.
xxvi.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	It shall be complied. At present no any major project activities are going on, and workers whoever involved in construction activities are from nearby area and do not require to stay at project site.
GENERAL CONDITIOS:		
i.	The project authorities must strictly adhere to the stipulations made by the West Bengal Pollution Control Board and State Government.	It is being adhered as per the stipulation made by WBPCB and State Government. Consent to Operate obtained from WBPCB is attached as **Annexure –7**
ii.	No further expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	It shall be followed. No further modification or expansion will be undertaken without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
iii.	At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM10, $PM_{2.5}$, SO_2 and NO_x are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the SPCB/ CPCB once in six months.	Ambient Air Quality Monitoring being carried on as per direction in four locations consideration of maximum ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, and NO_x. Latest Ambient Air Quality monitoring report and stack monitoring report is enclosed as **Annexure-1 & Annexure-8**
iv.	Industrial wastewater 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. The treated wastewater shall be utilized for plantation purpose.	Being complied. Effluent generated from roiling mill being treated in ETP and recycled back to the process. Sludge generated from ETP being utilized in SAF/given to pellet making plant for manufacturing of iron ore pellet. Cooling tower blowdown and softener/DM plant rejects being taken into neutralization/homogenization tank and utilized for dust suppression and, ash handling and for sprinkling on road to control fugitive dust emissions. No industrial effluent being discharged outside the factory premises.

EC F. No. J-11011/201/2013-IA II (I) Date: 21.12.2016 and EC amendment dated 29.04.2020		
Sl. No.	**CONDITIONS**	**COMPLIANCE STATUS**
v.	The overall noise levels in and around the plant area shall be kept well within the standards (85 dB(A)) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dB(A) during day time and 70 dB(A) during nighttime.	Noise control measure has already been implemented to keep the noise level well within the 85 dB(A) and ambient noise level below 75 dB(A) (during day time) and 70 dB(A) (during night time). Work Zone and Ambient Noise Monitoring report is enclosed as **Annexure- 11B & 11A**
vi.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Occupational Health Surveillance of the workers is being carried out on regular interval and records are maintained. Last Health checkup reports of some employees are enclosed as **Annexure-15**
vii.	The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.	Rain water harvesting pond has been developed within the plant premises to harvest the rain water. This water is being utilized in the lean season as per requirement.
viii.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio- economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	Environmental protection measures have been implemented for effective compliance of safe guards and recommended in the EIA/EMP reports. Socio-economic development of local community has already undertaken through providing job to local people. SIPL have undertaken various social activities in nearby villages in consultation with local communities for their benefit of health, education, cultural activities, and employment to local people etc. The SIPL has varieties of CSR activities with its Elegant Care Foundation. Drinking water is supplied to needy communities of local villages on regular basis. The company has dedicated CSR team to look after the welfare activities for local community and redressing of issues if any. Some photographs of CSR activity are attached as **Annexure-6.**
ix.	Requisite funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change (MoEF&CC) as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Bhubaneswar. The funds so provided shall not be diverted for any other purpose.	Requisite funds being released towards capital cost and recurring cost/annum for environmental pollution control measures to implement the conditions stipulated by MoEF&CC. Accordingly necessary facilities like ESPs followed by silos for de-dusting during boiler operation , bag filters along with dust extraction system, Water sprinkling system for fugitive dust suppression, water tankers and road sweeping machine for dust suppression on roads, green belt development and water recycling system etc. for abatement of the pollution. Concretization/paving of roads are in advance stage of completion. Technical man powers have been engaged for an efficient operation, monitoring and maintenance

EC F. No. J-11011/201/2013-IA II (I) Date: 21.12.2016 and EC amendment dated 29.04.2020		
Sl. No.	**CONDITIONS**	**COMPLIANCE STATUS**
		of the devices installed.
x.	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	Complied. Clearance letter has already sent to concerned local body. EC letter is also uploaded to company website. http://shakambhariispat.com/environmental-orders
xi.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF & CC at Bhubaneswar. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM_{10}, SO_2, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Being complied. Compliance status being periodically uploaded on the company website http://shakambhariispat.com/environmental-compliance Environmental parameter monitored has been displayed at the entrance of the company main gate in the public domain. Attached as **Annexure - 18**
xii.	The project proponent shall also submit six monthly report status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry at Bhubaneswar/ CPCB/SPCB shall monitor the stipulated conditions.	Six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data had been submitted to MoEF &CC and Pollution Control Board in both soft & hard copies. Now it is being submitted in soft copy only as per direction of Hon'ble MoEF&CC F. N0. 106-12/EPE dated. 11.05.2020.
xiii.	The environmental statement for each financial year ending 31st March in Form-V as 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 put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEF&CC at Bhubaneswar by e-mail.	Being complied. The environment statement (Form-V) for Financial Year 2023-24 has already been submitted to WBPCB with copy to Sub-office Office of the MOEF&CC, Kolkata. The report is uploaded on the company's website as per direction. http://shakambharispat.com/environmental-compliance
xiv.	The project proponent shall inform the public that the project has been accorded environment clearance by the Ministry and	It is Complied.

EC F. No. J-11011/201/2013-IA II (I) Date: 21.12.2016 and EC amendment dated 29.04.2020		
Sl. No.	**CONDITIONS**	**COMPLIANCE STATUS**
	copies of the clearance letter are available with the SPCB and may also be seen at website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at http:/envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspaper that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and copy of the same should be forwarded to the Regional Office at Bhubaneswar	
xv.	Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied. Land Development for the project was started w.e.f. 22.03.2017 and the date of financial closure is 14.01.2017
Additional condition as per EC Amended F. No. J-11011/201/2013-IA.II (I) dated 29th April, 2020		
i.	An affidavit ensuring compliance to the non-compliances/partial compliances reported in the monitoring report of the Regional Office dated 18/02/2019 shall be submitted to the Ministry and to the Regional Office of the Ministry at Bhubaneshwar within three months from date of issue of this letter.	Complied. We have already submitted the affidavit following the direction of Hon'ble MoEF&CC.

ANNEXURE- 1

TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024 – 12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Ambient Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XIV		Report No.	:	ENV/25/Sep./TR(A)/XIV/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Gopalganj Primary School
2.	Duration of Sampling	:	24 hrs. (10:30 a.m. – 10:30 a.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	32.0
2.	Average Relative Humidity (%)	:	70.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell
5.	Weather Condition	:	Clear

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of $PM_{2.5}$	µg/m^3	IS 5182 (Part 24) : 2019	43.51
2.	Concentration of PM_{10}	µg/m^3	IS 5182 (PART 23) : 2019	74.14
3.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	16.48
4.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	30.0
5.	Concentration of CO	mg/m^3	IS 5182 (Part 10): 2019	0.46
6.	Concentration of Pb	µg/m^3	IS 5182 (Part 22) : 2019	<0.01
7.	Benzo (a) Pyrene (BaP)	ng/m^3	IS 5182 (Part 12) : 2019 & ASTM D 6209-98, Sec. 11 (Vol. 11.07) : 2021	<0.36
8.	Benzene (C_6H_6)	µg/m^3	IS 5182 (Part 11) 2017& ASTM D 6209-98, Sec. 11 (Vol. 11.07) : 2021	<0.74
9.	Ozone (O_3)	µg/m^3	IS 5182 (Part-9) : 2019	20.0
10.	Ammonia (NH_3)	µg/m^3	IS 5182 (Part 25) : 2018	<4.18
11.	Nickel (Ni)	ng/m^3	EPA IO 3.2, 1999	<0.02
12.	Arsenic (As)	ng/m^3	EPA IO 3.2, 1999& APHA 23rd Ed 3114C : 2017	<0.01

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024 – 12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Ambient Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XV		Report No.	:	ENV/25/Sep./TR(A)/XV/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Madandih Village (0.5 KM Distance from Plant)
2.	Duration of Sampling	:	24 hrs. (10:00 a.m. – 10:00 a.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	30.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell
5.	Weather Condition	:	Clear

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of $PM_{2.5}$	µg/m^3	IS 5182 (Part 24) : 2019	34.29
2.	Concentration of PM_{10}	µg/m^3	IS 5182 (PART 23) : 2019	71.63
3.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	6.63
4.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	21.75
5.	Concentration of CO	mg/m^3	IS 5182 (Part 10): 2019	0.16
6.	Concentration of Pb	µg/m^3	IS 5182 (Part 22) : 2019	<0.01
7.	Benzo (a) Pyrene (BaP)	ng/m^3	IS 5182 (Part 12) : 2019 & ASTM D 6209-98, Sec. 11 (Vol. 11.07) : 2021	<0.36
8.	Benzene (C_6H_6)	µg/m^3	IS 5182 (Part 11) 2017& ASTM D 6209-98, Sec. 11 (Vol. 11.07) : 2021	<0.74
9.	Ozone (O_3)	µg/m^3	IS 5182 (Part-9) : 2019	15.0
10.	Ammonia (NH_3)	µg/m^3	IS 5182 (Part 25) : 2018	<4.18
11.	Nickel (Ni)	ng/m^3	EPA IO 3.2, 1999	<0.02
12.	Arsenic (As)	ng/m^3	EPA IO 3.2, 1999& APHA 23rd Ed 3114C : 2017	<0.01

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024 – 12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Ambient Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XVI		Report No.	:	ENV/25/Sep./TR(A)/XVI/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near Harmadih Rural Hospital
2.	Duration of Sampling	:	24 hrs. (09:30 a.m. – 09:30 a.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	32.0
2.	Average Relative Humidity (%)	:	70.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell
5.	Weather Condition	:	Clear

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of $PM_{2.5}$	µg/m^3	IS 5182 (Part 24) : 2019	32.59
2.	Concentration of PM_{10}	µg/m^3	IS 5182 (PART 23) : 2019	74.20
3.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	7.28
4.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	19.95
5.	Concentration of CO	mg/m^3	IS 5182 (Part 10): 2019	0.12
6.	Concentration of Pb	µg/m^3	IS 5182 (Part 22) : 2019	<0.01
7.	Benzo (a) Pyrene (BaP)	ng/m^3	IS 5182 (Part 12) : 2019 & ASTM D 6209-98, Sec. 11 (Vol. 11.07) : 2021	<0.36
8.	Benzene (C_6H_6)	µg/m^3	IS 5182 (Part 11) 2017& ASTM D 6209-98, Sec. 11 (Vol. 11.07) : 2021	<0.74
9.	Ozone (O_3)	µg/m^3	IS 5182 (Part-9) : 2019	16.5
10.	Ammonia (NH_3)	µg/m^3	IS 5182 (Part 25) : 2018	<4.18
11.	Nickel (Ni)	ng/m^3	EPA IO 3.2, 1999	<0.02
12.	Arsenic (As)	ng/m^3	EPA IO 3.2, 1999& APHA 23rd Ed 3114C : 2017	<0.01

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/37

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024 – 12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Ambient Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XVII		Report No.	:	ENV/25/Sep./TR(A)/XVII/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	East Direction from the Plant Boundary (Ferro Division)
2.	Duration of Sampling	:	24 hrs. (09:00 a.m. – 09:00 a.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	32.0
2.	Average Relative Humidity (%)	:	70.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell
5.	Weather Condition	:	Clear

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of $PM_{2.5}$	µg/m^3	IS 5182 (Part 24) : 2019	36.37
2.	Concentration of PM_{10}	µg/m^3	IS 5182 (PART 23) : 2019	72.58
3.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	8.56
4.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	23.25
5.	Concentration of CO	mg/m^3	IS 5182 (Part 10): 2019	0.18
6.	Concentration of Pb	µg/m^3	IS 5182 (Part 22) : 2019	<0.01
7.	Benzo (a) Pyrene (BaP)	ng/m^3	IS 5182 (Part 12) : 2019 & ASTM D 6209-98, Sec. 11 (Vol. 11.07) : 2021	<0.36
8.	Benzene (C_6H_6)	µg/m^3	IS 5182 (Part 11) 2017& ASTM D 6209-98, Sec. 11 (Vol. 11.07) : 2021	<0.74
9.	Ozone (O_3)	µg/m^3	IS 5182 (Part-9) : 2019	18.50
10.	Ammonia (NH_3)	µg/m^3	IS 5182 (Part 25) : 2018	<4.18
11.	Nickel (Ni)	ng/m^3	EPA IO 3.2, 1999	<0.02
12.	Arsenic (As)	ng/m^3	EPA IO 3.2, 1999& APHA 23rd Ed 3114C : 2017	<0.01

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

ANNEXURE- 2

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan		:	No	Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XVIII		Report No.	:	ENV/25/Sep./TR(A)/XVIII/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near DRI 350 TPD Control Room
2.	Duration of Sampling	:	08 hrs. (09:30a.m. – 05:30 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	34.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of SPM	µg/m^3	IS 5182 (Part 4) : 2019	934.63

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XVIII		Report No.	:	ENV/25/Sep./TR(A)/XVIII/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near DRI 350 TPD Control Room
2.	Duration of Sampling	:	08 hrs. (09:30a.m. – 05:30 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	34.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	14.13
2.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	26.55

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan		:	No	Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XIX		Report No.	:	ENV/25/Sep./TR(A)/XIX/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near DRI Kiln 100 TPD Control Room
2.	Duration of Sampling	:	08 hrs. (10:00 a.m. – 06:00 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	34.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of SPM	µg/m^3	IS 5182 (Part 4) : 2019	827.64

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XIX		Report No.	:	ENV/25/Sep./TR(A)/XIX/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near DRI Kiln 100 TPD Control Room
2.	Duration of Sampling	:	08 hrs. (10:00 a.m. – 06:00 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	34.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	12.84
2.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	26.10

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan		:	No	Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XX		Report No.	:	ENV/25/Sep./TR(A)/XX/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near Ferro Alloy SEAF Control Room
2.	Duration of Sampling	:	08 hrs. (10:30 a.m. – 06:30 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	34.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of SPM	µg/m^3	IS 5182 (Part 4) : 2019	386.35

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.				Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121				Sampling Date	:	12.09.2024		
						Period of Analysis	:	14.09.2024 – 14.09.2024		
						Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XX	Report No.	:	ENV/25/Sep./TR(A)/XX/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near Ferro Alloy SEAF Control Room
2.	Duration of Sampling	:	08 hrs. (10:30 a.m. – 06:30 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	34.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	7.06
2.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	24.08

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan		:	No	Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XXI		Report No.	:	ENV/25/Sep./TR(A)/XXI/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near SMS Control Room
2.	Duration of Sampling	:	08 hrs. (11:00 a.m. – 07:00 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	33.0
2.	Average Relative Humidity (%)	:	65.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of SPM	µg/m^3	IS 5182 (Part 4) : 2019	460.43

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.				Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121				Sampling Date	:	12.09.2024		
						Period of Analysis	:	14.09.2024 – 14.09.2024		
						Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XXI	Report No.	:	ENV/25/Sep./TR(A)/XXI/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near SMS Control Room
2.	Duration of Sampling	:	08 hrs. (11:00 a.m. – 07:00 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	33.0
2.	Average Relative Humidity (%)	:	65.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	7.70
2.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	20.02

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan		:	No	Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XXII		Report No.	:	ENV/25/Sep./TR(A)/XXII/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near 16 MW Control Room
2.	Duration of Sampling	:	08 hrs. (11:30 a.m. – 07:30 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	34.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of SPM	µg/m^3	IS 5182 (Part 4) : 2019	350.65

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

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Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XXII		Report No.	:	ENV/25/Sep./TR(A)/XXII/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near 16 MW Control Room
2.	Duration of Sampling	:	08 hrs. (11:30 a.m. – 07:30 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	34.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	11.56
2.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	24.08

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit	
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024	
							Period of Analysis	:	14.09.2024 – 14.09.2024	
							Date of Issue	:	16.09.2024	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Work Zone Air	
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XXIII		Report No.	:	ENV/25/Sep./TR(A)/XXIII/24-25	

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near 600 – TPD M.C.C Room
2.	Duration of Sampling	:	08 hrs. (10:00 a.m. – 06:00 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	34.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of SPM	µg/m^3	IS 5182 (Part 4) : 2019	865.35

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XXIII		Report No.	:	ENV/25/Sep./TR(A)/XXIII/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Near 600 – TPD M.C.C Room
2.	Duration of Sampling	:	08 hrs. (10:00 a.m. – 06:00 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	34.0
2.	Average Relative Humidity (%)	:	68.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	7.06
2.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	20.02

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan		:	No	Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XXIV		Report No.	:	ENV/25/Sep./TR(A)/XXIV/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Rolling Mill Dispatch Area
2.	Duration of Sampling	:	08 hrs. (09:30 a.m. – 05:30 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	35.0
2.	Average Relative Humidity (%)	:	74.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of SPM	µg/m^3	IS 5182 (Part 4) : 2019	360.48

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/57

Name of the Industry	:	Shakambhari Ispat & Power Ltd.				Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121				Sampling Date	:	11.09.2024		
						Period of Analysis	:	14.09.2024 – 14.09.2024		
						Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Work Zone Air		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XXIV	Report No.	:	ENV/25/Sep./TR(A)/XXIV/24-25		

A] GENERAL INFORMATION

1.	Location of Sampling	:	Rolling Mill Dispatch Area
2.	Duration of Sampling	:	08 hrs. (09:30 a.m. – 05:30 p.m.)

B] METEOROLOGICAL INFORMATION

1.	Average Temperature (^{0}C)	:	35.0
2.	Average Relative Humidity (%)	:	74.0
3.	Barometric Pressure (mm of Hg)	:	751.0
4.	Smell or Odour	:	No Remarkable Smell

C] RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Concentration of SO_2	µg/m^3	IS 5182 (Part 2) 2017& ASTM D 2914-01,Sec. 11 (Vol. 11.07) : 2017	12.20
2.	Concentration of NO_2	µg/m^3	IS 5182 (Part 6) 2017& ASTM D 1607-91 : Sec. 11 (Vol. 11.07) : 2018	26.55

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

<End of Report>

ANNEXURE- 3

PLANT PHOTO RCC ROAD & PAVER BLOCK AREA INSIDE PLANT

ANNEXURE- 4

TRUCK PARKING AREA

ANNEXURE- 5

PLANTATION/GREEN COVER WITH INDIGENOUS SPECIES

ANNEXURE- 6

REPORT ON CSR ACTIVITIES (April-September),2024.

Project	Segment	Activities	Plant	Villages Covered	Expected Outcome	Photographs
Women Sewing Training Institute	Livelihood.	Sewing training has been started in Gopalgunj (Layabadi). Total trainees enrolled: Married Women: 82 Un-married Women: 26 Girl students: 27	**SIPL**	Madandih Erekusum Radhamadhabpur Harmadih Gopalgunj (Layabadi)	Helpline no given for complaint/suggestion. Rules & regulation pasted in the notice board. Two trainers imparting training classes Trainees are able to making Petticoat, Nighty Pajama, Kurta, Frock Towel, Baby Frock, Underwear etc. At present trainees are learning to making industrial gloves.	
Tricycle & Wheel chair Distribution for especially able person	Health, Drinking water & Sanitation.	We had taken an initiative Tricycle & Wheel chair distribution to the especially able person of our operational area as per need. After survey the 15 nos. of beneficiary were selected for this program.	**SIPL**	Madandih Radhamadhabpur Harmadih Arekusum Gopalgunj	The beneficiaries after receiving Tricycle & Wheel chair extended great thanks to Shakambhari Group for the initiative.	 

Hand pump & Tube well repairing	Health, Drinking water & Sanitation.	As per our previous practice we had taken an initiative to repair defunct tube well and handpump of our operation area in the summer season.	**SIPL**	Madandih Radhamadhabpur Harmadih Arekusum Gopalgunj	As per requirement of villagers we have repaired 30 nos. of tube well. This initiative had eradicated water scarcity of local village people.	 
Bathing Ghats & Ladies changing room construction	Health, Drinking water & Sanitation.	We have completed construction of Bathing Ghat & ladies changing room in Harmadih and Radhamadhabpur village.	**SIPL**	Radhamadhabpur Harmadih	The villagers can easily access water in their daily life. The villagers are appreciated to us for this initiative.	 

Drinking Water Supply	Health, Drinking water & Sanitation	Drinking water distribution through three water tankers in five villages. Supply of drinking water to beneficiaries during social rituals. Drinking water supply to local clubs/villages on festivals	**SIPL**	Madandih Radhamadhabpur Harmadih Arekusum Gopalgunj	Monthly meeting organized with the Drivers to know the status & constraints and steps taken accordingly for value addition & improvement of services.	 
Food distribution program	Environment & Culture	The villagers of Harmadih requested us to support their annual program for distribute cooked food items for orphans and destitute people in this area.	**SIPL**	Harmadih	As per requirement we have delivered the food items to the villagers of Harmadih. The villagers are appreciated to us for this initiative.	 

Shraboni Utsav	Environment & Culture	Shrabani Utsab has been organized in Baba Birinchinath Dham Temple premises during Shravan month of Hindu Calendar. Portable drinking water & tea/biscuits given to devotees on all five Mondays.	**SIPL**	Covered devotees from Asansol/ Bunrpur to Raghunathpur	The initiative has been appreciated by most of the devotees	 
Sports gear distribution to local clubs	Youth & Sports	24 Football distributed to 19 number nearby Clubs of our operation area. And one pair football goal post net, one number of volley ball & Net and cricket bat and wicket for Mandandih Swami Vivekananda Club.	**SIPL**	Madandih Radhamadhabpur Harmadih Arekusum Gopalgunj. Mekatala. Garhpanchokaot. Cholaeria Bartoria.	This activity leads the sports development & Physical development of local youth.	 

Community Hall construction in Madandih	Infrastructure Development	For the recreation of the people of surrounding villages a community Center Hall with all basic facilities has been constructed in Madandih, where members of a community tend to gather for group activities, social support, public information and other purposes.	**SIPL**	Madandih	The construction work of community hall has been completed on July 2024. The community centre would play a pivotal role where the community may conduct social program for men, women and children.	 
Sapling Distribution Program	Environment & Culture	We have organized Sapling distribution program in Madandih village, more than 1000 saplings distributed in the premises of Madandih Hari Mandir.	**SIPL**	Madandih	Around 250 villagers had taken sapling from camp. The villagers are appreciated to us for this initiative.	 

Plantation Drive/ Green Belt development in Madandih Village	Environment & Culture	Trees contribute to the production of food resources, maintain ecological balance, improve air quality, climate amelioration, conserves water, preserves soil, supports wildlife, reduces drought and prevents soil erosion and pollution. In this context, we had organized mass tree plantation drive on the occasion of World Environment Day the Madandih villages.	**SIPL**	Madandih	We have been planting more than 200 saplings in the road side.	 
Smart Class Room Development in Binduidih Govt. Primary School	Education	It was mutually agreed to support develop smart class room the school. which is duly recommended by the SDO, Raghunathpur. Good infrastructure in school not only makes it a desirable place for students to study but it will create a cohesive environment for them.	**SIPL**	Binduidih	We have been procured all materials (Desktop, Printer, Projector, Screen) regarding smart class. After the discussion with Headmaster of school we will shifted those materials in the school for inauguration program.	

ANNEXURE- 7

NOC NO180762

WEST BENGAL POLLUTION CONTROL BOARD

Paribesh Bhawan
10A, Block-LA, Sector-III
Bidhannagar, Kolkata-700106

Memo No. 422 -2N-21/2012(E)-PART-I Dated 18.08.2023

From :
Member Secretary,
West Bengal Pollution Control Board

To : M/s. Shakambhari Ispat & Power Limited,
"Diamond Prestige", 41A,A.J.C. Bose Road, 8th Floor,#801,
Kolkata - 700 017.

Sub : Consent to Establish (NOC) from Environmental Point of View

Ref : i) Your letter No. Nil Dated 14.08.2023
ii) Environmental Clearance issued by MOEF&CC,GOI vide EC Identification No.EC23A008WB179534,File No.IA-J-11011/282/2021-IA-II(IND-I) dated 19.07.2023

Dear Sirs,

In response to the application for Consent to Establish (NOC) for proposed expansion unit of M/s Shakambhari Ispat & Power Limited for manufacturing/storage/handling production of 0.7875 million tons per annum Crude Steel/Stainless Steel, 0.214272 million tons per annum Ferro-alloys(maximum) along with allied facilities at Village-Parvatpur,* this is to inform you that this Board hereby grants the Consent to Establish (NOC) from the environmental point of the above subject to the following conditions and special conditions annexed.
*Mandandih, Radhamadabpur,PO-Bartoria,Tehsil-Raghunathpur, Dist.-Purulia, West Bengal(For details of configuration see annexures).

1. The quality of sewage and trade effluent to be discharged from your factoy shall satisfy the permissible limits as prescribed in IS : 2490 (Pt. I) of 1974, and/or its subsequent amendment and Environment (Protection) Rules 1986.

2. Suitable measures to treat your effluent shall be adopted by you in order to reduce the pollutional load so that the quality of the effluent satisfies the standards mentioned above.

3. You shall have to apply to this Board for its consent to operate and discharge of sewage and trade effluent according to the provisions of the water (Prevention & Control of Pollution) Act, 1974. No sewage or trade effluent shall be discharged by you without prior consent of this Board.

4. All emission from your factory shall conform to the standards as laid by this Board.

5. No. emission shall be permitted without prior approval of this Board and you shall apply to this Board for its consent to operate and atmospheric emission as per provision of the Air (Prevention & Control Pollution) act, 1981.

6. No industrial plant, furnace, flues, chimneys, control equipment, etc. shall be constructed/reconstructed/ erected/re-erected without prior approval of this Board.

18.08.2023
Chief Engineer
W. B. Pollution Control Board
Dept. of Environment, Govt. of W.B.

NOC NO180762

7. You shall comply with
   (i) Water (Prevention and Control of Pollution) Cess Act, 1977, if applicable.
   (ii) Water (Prevention and Control of Pollution) Cess Act, 1978, if applicable.
   (iii) Environment (Protection) Act, 1986
   (iv) Environment (Protection) Rules, 1986
   (v) Hazardous Wastes (Management and Handling) Rules, 1989 and Amended Rules, 2000
   (vi) Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and Amended Rules, 2000
   (vii) Manufacture, Use, Import and Storage and Hazardous Micro-Organisms, Genetically Engineered Organisms or Cell Rules, 1989
   (viii) The Public Liability Insurance Act, 1991 and Amended Act, 1992
   (ix) The Public Liability Insurance Rules, 1991 and Amended Rules 1993
   (x) Biomedical Wastes (Management & Handling) Rules, 1998 and Amended Rules 2000 if applicable.
   (xi) Recycled Plastics Manufacture and Usage Rules 1999, if applicable and
   (xii) Ozone Depleting Substances (Regulation & Control) Rules, 2000, if applicable

8. You will have to abide by any other stipulations as may be prescribed by any authority/local bodies/Government Departments etc.

SPECIAL CONDITION :

See Annexures.

Gross Capital Investment - Rs.320 Crores.

Any violation of the aforesaid conditions shall entail cancellation of this Consent to Establish (NOC)

Yours faithfully,

18/08/2023.

Member Secretary/Chief Engineer
West Bengal Pollution Control Board (EIM CELL)

Chief Engineer
W. B. Pollution Control Board
Dept. of Environment, Govt. of W.B.

Memo No. 422 -2N-21/2012(E)-PART-I dtd. 18/08/2023 Dated.....

Copy forwarded for information to :

1. Chief Inspector of Factories, Government of West Bengal, N. S. Building, Kolkata-700 001
2. Director of Industries/Director of Cottage & Small Scale Industries, Government of West Bengal, N. S. Building. Kolkata-700 001
3. Guard file, West Bengal Pollution Control Board.
4. Environmental Engineer, I/II/Alipur R.O./Howrah R.O./Hooghly R.O./B.R.O./D.R.O./Haldia R.O./S.R.O./Malda R.O./ Asansol R.O./WBPC Board.

5. Alipore Regional Office
"Minority Bhawan", 5th Floor, 12, Biplabi Kanailal Bhattacharya Sarani, Alipore, Kolkata-700 027
Telefax No. 033-2448-5553
Tel No. 033-2448-5554

6. Asansol Regional Office
Kalyanpur Satelite Township Project (KSTP), Dr. B.C. Roy Road, P.O.- Dakshin Dhadka, P.S. Asansol (North), Dist.-Paschim Bardhaman, Asansol-713 302
Telefax No. 0341-2999280
0341-2999281

7. Barrackpore Regional Office
Panpur More, Kalyani Expressway, Vill.-Panpur, P.O.-Narayanpur, Dist.: 24-Parganas (N), Pin-743 126
Telefax No. 033-2580 0573

8. Durgapur Reginal Office
Sahid Khudiram Sarani, City Centre, Durgapur, Paschim Bardhaman-713 216.
Tel No. 0343-2546708
Telefax No. (0343) 2544915

9. Haldia Regional Office
Mouza : Raghunathchak, PS : Bhabanipur (Formerly Sutahata), PO : Barghasipur
Dist. Purba Medinipur, Pin : 721 657
Tel No. 03224-291293/94

10. Hooghly Regional Office
Himalaya Bhawan, Delhi Road, Dankuni, Hooghly, Pin : 712 311
Telefax No. 033-2689-0657

11. Howrah Regional Office
"Minority Bhawan", 5th Floor, 12, Biplabi Kanailal Bhattacharya Sarani, Alipore, Kolkata-700 027
Tel No. 033-2448-2219/2220

12. Kolkata Regional Office
Mani Square, Block No. 8IT, Western Side, 8th floor, 164/1, Maniktala Main Road, Kolkata-700 054
Tel No. 033-2320-0069 / 9836288884

13. Malda Regional Office
Paribesh Bhaban,
Vill.: Abhirampur, P.O.: Mokdumpur, P.S.: English Bazar, Malda-732 103
Tel No. 03512-223449

14. Saltlake Regional Office
Mani Square, Block No. 8IT, Western Side, 8th floor, 164/1, Maniktala Main Road, Kolkata-700 054
Tel No. 2320-0097 / 9330869729

15. Siliguri Regional Office
Paribahan Nagar, P.O.: Matigara, Siliguri, Darjeeling, Pin-734 010
Tel No. 0353-257 1115
Telefax No. 0353-257 1113

18/08/2023

Member Secretary/Chief Engineer,
West Bengal Pollution Control Board
(EIM CELL

Chief Engineer
W. B. Pollution Control Board
Dept. of Environment, Govt. of W.B.

ANNEXURE-I TO NOC SL No. NO180762

Special conditions issued for Expansion of Shakambhari Ispat & Power Limited plant for production of 0.7875 million tons per annum Crude Steel/Stainless Steel, 0.214272 million tons per annum Ferro-Alloys (maximum) along with allied facilities at Village: Parvatpur, Madandih, Radhamadabpur, P.O.: Bartoria, Tehsil: Raghunathpur, District: Purulia, West Bengal. (Application no. 4070929)

UNIT CONFIGURATION AND CAPACITY

Plant/Facilities	As per EC granted by MoEFCC on 21.12.2016 & its's Amendment on 29.04.2020		Proposed Units/Capacity Enhancement		Total after Expansion	
	Unit	Capacity TPA	Unit	Capacity in TPA	Unit	Capacity in TPA
Pellet Plant with Grinding Facility	1x1870TPD	582,000	Capacity Enhancement	268,000	1x2835TPD	850,000
Producer Gas Plant	-	-	6x4000 Nm^3/hr	24,000 Nm^3/hr	6x4000 Nm^3/hr	24,000 Nm^3/hr
Sponge Iron Plant	DRI Kiln 4x100TPD + 2x350TPD + 1x600TPD	128,000 224,000 192,000	Capacity Enhancement of 4x100TPD+ 2x350TPD+ 1x600TPD	30,400 (additional) 53,200 (additional) 45,600 (additional)	4x100TPD+ 2x350TPD+ 2x600TPD	910,800
		544,000	Additional 1x600TPD	237,600		
Blast Furnace with PCI	Mini Blast Furnace: 1x350m^3 Pig Casting Machine (PCM): 1x1500TPD	249,500	Capacity Enhancement of Mini Blast Furnace: 1x350m^3	166,600 (additional)	Mini Blast Furnace:1x350^3 PCM:1x1500TPD	416,500
Sinter Plant	1x20m^2	198,000	Sinter Plant of changed configuration 1x90m^2 will be installed	597,600 (additional)	1x90m^2	795,600
SMS – MS/SS Billets	IF: 9x25T LRF: 1x30T & CCM: 3x6/11	MS Billets 523,950	Capacity enhancement/ Product Modification + 1x25 Ton AOD	263,550 MS/SS Billets (additional)	IF: 9x25T LRF: 1x30T + 1x25 AOD & CCM: 3x6/11m	787,500 MS/SS Billets

15/08/2023

Chief Engineer
W. B. Pollution Control Board
Dept. of Environment, Govt. of W.B.

ANNEXURE-I TO NOC SL No. NO180762

Special conditions issued for Expansion of Shakambhari Ispat & Power Limited plant for production of 0.7875 million tons per annum Crude Steel/Stainless Steel, 0.214272 million tons per annum Ferro-Alloys (maximum) along with allied facilities at Village: Parvatpur, Madandih, Radhamadabpur, P.O.: Bartoria, Tehsil: Raghunathpur, District: Purulia, West Bengal. (Application no. 4070929)

Plant/Facilities	As per EC granted by MoEFCC on 21.12.2016 & its's Amendment on 29.04.2020		Proposed Units/Enhanced Capacities		Total after Expansion	
	Unit	Capacity TPA	Unit	Capacity in TPA	Unit	Capacity in TPA
Rolling Mill along with wire drawing facility	1000TPD	MS Long Products 300,000	1000TPD	360,000 MS/SS Long Products	2000TPD	660,000 MS/SS Long Products
Reheating Furnace	--	--	2x40TPH	--	2x40TPH	--
Oxygen Plant	225 TPD	--	--	--	225 TPD	--
Captive Power Plant	AFBC - 36 TPH	8.5 MW	--	--	AFBC - 36 TPH	8.5 MW
	CFBC - 100 TPH	25 MW	--	--	CFBC - 100 TPH	25 MW
	CFBC - 120 TPH	28.5 MW	--	--	CFBC - 120 TPH	28.5 MW
	WHRB @4x100TPD DRI - 40 TPH	8 MW	--	--	WHRB @4x100TPD DRI- 40 TPH	8 MW
	WHRB@2x350TPD DRI- 71 TPH	15 MW	--	--	WHRB @ 2x350TPD DRI-71TPH	15 MW
	WHRB @1x 600TPD DRI-64 TPH	14 MW	--	2 MW	WHRB @ 1x 600TPD DRI-64 TPH	16 MW
	--	--	WHRB @1x600TPD DRI - 64TPH	16 MW	WHRB @ 1x 600TPD DRI -64TPH	16 MW
	--	--	BF Gas Based	9 MW	BF Gas Based	9 MW
	Total	**AFBC/CFBC-62MW WHRB- 37MW**	**Total**	**WHRB-18MW BF Gas Based-9MW**	**Total**	**AFBC/CFBC- 62 MW WHRB- 55 MW BF Gas based-9MW**
		99 MW		**27 MW**		**126 MW**

10/08/2023
Chief Engineer
W. B. Pollution Control Board
Dept. of Environment, Govt. of W.B.

ANNEXURE-I TO NOC SL No. NO180762

Special conditions issued for Expansion of Shakambhari Ispat & Power Limited plant for production of 0.7875 million tons per annum Crude Steel/Stainless Steel, 0.214272 million tons per annum Ferro-Alloys (maximum) along with allied facilities at Village: Parvatpur, Madandih, Radhamadabpur, P.O.: Bartoria, Tehsil: Raghunathpur, District: Purulia, West Bengal. (Application no. 4070929)

Plant/Facilities	As per EC granted by MoEFCC on 21.12.2016 & its's Amendment on 29.04.2020		Proposed Units/Enhanced Capacities		Total after Expansion	
	Unit	Capacity TPA	Unit	Capacity in TPA	Unit	Capacity in TPA
Iron Ore Beneficiation	--	0.63 MTPA	Configuration Change from 0.63MTPA to 1.0 MTPA	0.37 MTPA (additional)	--	1.0 MTPA
Coal Washery		0.74 MTPA	-	-	-	0.74 MTPA
Lime Plant	250TPD	80,000TPA	-	-	250TPD	80,000TPA
Ferro-Alloy Plant with Metal Recovery Plant	4x9MVA SEAF With Metal Recovery Plant	63,150TPA Fe-Mn or Si-Mn or Fe-Si or High Carbon Ferro Chrome or Pig Iron or in combination of any	Capacity Enhancement of 4x9MVA SAF + Additional installation of 4x9MV SAF	Fe-Mn-194,058 or Si-Mn- 142,848 or Fe-Si –64,282 or High Carbon Fe-Cr - 135,330 or Fe-Si-Cr– 88,664, or Pig Iron-214,272, or in combination of any	8x9MVA SAF With Metal Recovery Plant	Fe Mn- 194,058, or Si-Mn- 142,848 or Fe Si –64,282 or High Carbon Fe-Cr 135,330 or Fe-Si-Cr– 88,664, or Pig Iron-214,272 or in combination of any
Briquette Plant	--	--	1x 50 TPH	300,000	1x 50 TPH	300,000
Sinter Plant (Ferro Division)	--	--	1x600 TPD	216,000	1x600TPD	216,000

18/08/2023

Chief Engineer (EIM Cell)
West Bengal Pollution Control Board

Chief Engineer
W. B. Pollution Control Board
Dept. of Environment, Govt. of W.B.

Annexure-II to NOC Sl. No. NO180762

Special conditions issued for Expansion of Shakambhari Ispat & Power Limited plant for production of 0.7875 million tons per annum Crude Steel/Stainless Steel, 0.214272 million tons per annum Ferro-Alloys (maximum) along with allied facilities at Village: Parvatpur, Madandih, Radhamadabpur, P.O.: Bartoria, Tehsil: Raghunathpur, District: Purulia, West Bengal. (Application No. 4070929)

A) Emission: -

Sl. No	Emission Sources	Air Pollution Control System	Stack Height from G.L. (in mts.)
1	Pellet Plant (0.85MTPA)	ESP	50
2	PCI Unit of Pellet Plant	Bag Filter	40
3	Sponge Iron Plant (DRI Kiln-1x600 TPD) followed by WHRB-64TPH (16MW)	ESP	72
4	I. Bin/PSB of (DRI Kiln 1x600 TPD)	Bag Filter & Stack common with I. Bin/PSB of existing DRI Kiln-1x600TPD	30
5	Day Bin (DRI Kiln 1x600 TPD)	Bag Filter & Stack common with Day Bin of existing 2x350 TPD DRI Kilns	30
6	Product House (DRI Kiln 1x600 TPD)	Bag Filter & Stack common with existing Product House of 1x600 & 2x350 TPD DRI Kiln	30
7	Iron Circuit (DRI Kiln 1x600 TPD)	Bag Filter & Stack common with Iron Circuit of 1x600 & 2x350 TPD DRI Kiln	30
8	Coal Circuit (DRI Kiln 1x600 TPD)	Bag Filter & Stack common with Coal Circuit of existing 1x600 TPD DRI Kiln	30
9	Mini Blast Furnace ($1x350m^3$)	Stack attached with Stoves	45
10	Cast House tapping from MBF	Bag Filter & Stack attached with spark arrestor & dust extraction hood at Cast House	35
11	PCI Unit of Mini Blast Furnace	Bag Filter	40
12	Sinter Plant ($1x90m^2$)	Head ESP attached with Sinter Machine	50
13	Sinter Plant Breaker & Sinter Screen at Tail end of Sinter M/c	Tail ESP attached Sinter Breaker & Sinter Screen	50
14	AOD Plant (1x25T) at SMS	Bag Filter & Spark Arrestor	35
15	Re-Heating Furnace-1 (1x40TPH)	Recuperator	30
16	Re-Heating Furnace-2(1x40TPH)	Recuperator	30
17	CFBC Boiler-120TPH (28.5MW)	ESP	92
18	CHP of CFBC Boiler (120TPH)	Bag Filter	30
19	Iron Ore Grinding Ball Mill for Iron Ore Beneficiation Plant	Bag Filter	30

18/05/2023
Chief Engineer
W. B. Pollution Control Board
Dept. of Environment, Govt. of W.B.

Annexure-II to NOC Sl. No. NO180762

Special conditions issued for Expansion of Shakambhari Ispat & Power Limited plant for production of 0.7875 million tons per annum Crude Steel/Stainless Steel, 0.214272 million tons per annum Ferro-Alloys (maximum) along with allied facilities at Village: Parvatpur, Madandih, Radhamadabpur, P.O.: Bartoria, Tehsil: Raghunathpur, District: Purulia, West Bengal. (Application No. 4070929)

20	Coal Grinding, Screening, Vibro Feeder of Coal Washery Unit	Bag Filter	30
21	Lime Plant	Bag Filter	32
22	Lime Plant's Screen House, Lime Size Unit, Lime delivery building, Material Storage building	Bag Filter	32
23	1x9MVA SAF No.-5	Forced Draft Cooler & Bag Filter	32
24	1x9MVA SAF No.-6	Forced Draft Cooler & Bag Filter	32
25	1x9MVA SAF No.-7	Forced Draft Cooler & Bag Filter	32
26	1x9MVA SAF No.-8	Forced Draft Cooler & Bag Filter	32
27	Sinter Plant (Ferro Division)	Cyclone Separator & Bag Filter	30
28	Briquette Plant (Ferro Division)	Cyclone Separator	30
28	DG Set (1010KVA) 14 Nos.	DG set to be provided with acoustic enclosure	6.5 mts above DG Room

1. Stacks should have sampling port, platform and ladder as per the Emission Regulation Part–III of CPCB. Continuous stack monitoring facilities should be provided with sponge iron units, ferro-alloy plant & CPP.
2. The emission levels from all emission sources connected with Air Pollution Control devices should be kept below 30mg / Nm^3.
3. Standards for sponge iron plant issued by MoEF&CC shall be strictly complied with.
4. The National Ambient Air Quality Emission Standards issued by MoEF&CC should be strictly complied with.
5. The unit shall not operate DRI kilns without WHRB-ESP operation.
6. Dry fog system and water sprinklers to be installed to arrest fugitive emission.
7. 24x7 continuous emission monitoring system at process stacks to monitor stack emission as well as 04 Nos. Continuous Ambient Air Quality Station (CAAQMS) for monitoring AAQ parameters to be installed. All the devices to be connected to WBPCB and CPCB servers.

B) <u>Effluent:</u> -

1. Process – Any process effluent generated will be treated in properly designed ETP. Treated effluent to be utilized within the plant premises.
2. DM plant reject/softeners backwash water should be taken to neutralization/homogenization tanks and to be utilized within the plant premises for dust suppression, ash conditioning, bed ash & slag cooling etc.
3. Cooling water to be recycled.
4. Domestic - to be discharged through septic tank to soak-pit within the unit premises. Sewage Treatment Plant of a suitable capacity shall also be installed for the treatment of domestic effluent. Suitable measures shall be adopted for sewage water handling to ensure no contamination of any kind of water body.
5. The unit should strictly follow ZLD concept.

18/08/2023.
Chief Engineer
W. B. Pollution Control Board
Dept. of Environment, Govt. of W.B.

Annexure-II to NOC Sl. No. NO180762

Special conditions issued for Expansion of Shakambhari Ispat & Power Limited plant for production of 0.7875 million tons per annum Crude Steel/Stainless Steel, 0.214272 million tons per annum Ferro-Alloys (maximum) along with allied facilities at Village: Parvatpur, Madandih, Radhamadabpur, P.O.: Bartoria, Tehsil: Raghunathpur, District: Purulia, West Bengal. (Application No. 4070929)

C) Solid Waste: -

1. Fly ash to be sold to cement manufacturing units/used for abandoned mine filling.
2. Dolo-char to be used in AFBC.
3. Bottom ash to be used for land filling and road making.
4. Induction furnace slag to be used for road making and land filling after metal recovery in slag crusher.
5. Ferro-manganese slag to be utilized for production of Silico-manganese. Silico-manganese slag to be used for road making and land filling.
6. Ferro-chrome slag to be disposed off in an environmentally safe manner.
7. Hazardous Waste to be collected and disposed of as per the Hazardous Wastes (Handling and Trans-boundary Movement) Rules, 2016.

D) General: -

1. Noise Control – Ambient noise & D.G. Set noise level not to exceed the permissible limit.
2. No additional machinery / equipments can be installed without permission from this board.
3. Adequate arrangement for dust suppression in raw material handling section to be provided.
4. At least 33% of the total project area should be under green belt.
5. Rain water harvesting must be done however recharging of harvested rain water is not allowed under any circumstances.
6. The 4th hole extraction system shall be provided in the SEAFs.
7. The conveyor belt for transferring materials to day bins to be covered.
8. Good house-keeping to be maintained.
9. Permission for extracting ground water, if any, must be obtained from the competent authority.
10. Project proponent should not undertake any activity on any portion of land which is not under their possession.
11. Land conversion certificate, if applicable, to be obtained from the competent authority before initiating expansion activity.
12. Conditions laid down in the Environmental Clearance obtained for the expansion project from MoEF&CC issued vide EC Identification No.-EC23A008WB179534 File No.-IA-J-11011/282/2021-IA-II(IND-I) dated 19/07/2023 must be strictly complied with.
13. All statutory licenses/permissions as applicable to be obtained from the competent authorities.
14. This NOC is valid up to 31.08.2030 for setting up the expansion project.

18/09/2023

Chief Engineer (EIM Cell)
West Bengal Pollution Control Board

Chief Engineer
W. B. Pollution Control Board
Dept. of Environment, Govt. of W.B.

WEST BENGAL POLLUTION CONTROL BOARD

'Paribesh Bhawan'
Bldg. No. - 10A, Block - LA, Sector-III
Salt Lake City, Kolkata-700 098

Consent Letter Number : CO134682

Memo Number : 311 - WPC/Red/Ast/Cont/82/02 Date : 31/7/2023

Consent to Operate

under

Section 25 & 26 of the **Water (Prevention and Control of Pollution) Act, 1974** and
Section 21 of the **Air (Prevention and Control of Pollution) Act, 1981**

The West Bengal Pollution Control Board (hereinafter referred to as State Board) under the provisions of Section 25 & 26 of the Water (Prevention and Control of Pollution) Act, 1974, as amended and Section 21 of the Air (Prevention and Control of Pollution) Act, 1981, as amended and Rules and Orders made thereunder, hereby grants its consent to :

M/s Shakambari Ispat & Power Ltd.

(Address of Regd. office/Head/Office/City Office)

(hereinafter referred to as Applicant) for its unit located at Vill. - Madandih P.O. - Bantania, P.S. - Naturia, Dist. - Purulia, 723121

(Detailed address of the manufacturing unit)

for a period from 01-08-2023 to 31-07-2028

to operate the industrial unit and to discharge liquid effluent and to emit gaseous effluent from the premises/land of the industrial unit, in accordance with the conditions as mentioned in the Annexure to this consent letter provided on any day at any instance the quantity and quality of liquid discharge and gaseous emission shall not exceed the permissible limit as specified in the Table I & II of this consent letter and in the Environmental (Protection) Act, 1986.

Breach of the conditions and / or failure to comply with the directions as set out in the Annexure shall render the applicant liable for prosecution under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981.

The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alter the conditions of this consent letter giving one month's notice to the applicant.

West Bengal Pollution Control Board Asansol Regional Office Seal

For and on behalf of the State Board

31/7/23

(Member Secretary/Chief Engr./ Sr. Env. Engr. / Env. Engr. / Asst. Env. Engr.)

ANNEXURE

Consent to M/s. Shakambari Ispat & Power Ltd.
for its unit at Vill.- Madandih, P.O.- Baratoria, P.S.- Neturia,
Dist.- Purulia - 723121

Conditions :

01. This Consent is valid for the manufacture of :-

Sl. No.	Name of major products and by-products	Quantity manufactured per month
01	Sponge Iron	5,44,000 MT/year.
02	Captive Power	70·5 MW
03	Fe-Mn OR Si-Mn OR Fe-Cr OR Fe-Si OR	63150 MT /year
04	Pig Iron OR in combination of any	
05	MS Billets	407520 MT / year.
06	TMT BAR & WIRE ROD	3,00,000 MT/year
07	Dolochar	9975 MT/month
08	Ferro Manganese Slag	4735 MT/month
09		
10		
11		
12		

02. The *Applicant* shall remain responsible for quantity and quality of liquid effluent and air emissions.

03. **Daily** discharge of industrial liquid effluent shall not exceed — KL.

04. **Daily** discharge of domestic liquid effluent shall not exceed 45 KL.

05. **Daily** discharge of mixed (industrial & domestic) liquid effluent shall not exceed — KL.

06. The *Applicant* shall discharge liquid effluent to Soak Pit (place of discharge) through 01 (One) nos. outlets / outfalls.

07. To bring into any altered or new outlet/outfall or to change the place of discharge, the Applicant shall have to inform the Board and obtain prior permission of the Board in this effect.

08. The *Applicant* shall provide comprehensive facility for treatment of industrial liquid waste and domestic liquid waste (sewage, sullage and liquid effluent generated from canteen), and operate and maintain the same continuously so that the quality of final effluent conforms to the *Standard* as given in Table-I in page 03.

(Member Secretary/Chief Engr./ Sr. Env. Engr. / Env. Engr. / Asst. Env. Engr.)

Continued.....

onsent to M/s Shakambari Ispat & Power Ltd

for its unit at Vill.- Madandih, P.O.- Bantoria, P.S.- Neturia, Dist.- Purulia, - 723121

Table-I

Outlet No.	Nature of effluent	Parameters	Standard	Frequency of effluent sampling
01.	Domestic	pH	Between : 5.5-9.0	Yearly
		Total Suspended Solids	Not to exceed : 100 mg/l.	
		Biochemical Oxygen Demand (3day at 27°C)	Not to exceed : 30 mg/l.	
		Chemical Oxygen Demand	Not to exceed : 250 mg/l.	
		Oil & Grease	Not to exceed : 10 mg/l.	

09. The *Applicant* falls in the .....Category of the Water (Prevention and Control of Pollution) Cess Act, 1977 and Rules made thereunder and the Applicant shall comply with the provisions of the said Act and Rules made thereunder.

10. **Daily** water consumption for the following purposes should not exceed :-

- Industrial cooling, spraying in mine pits and boiler feed water (Water used for gardening should be included in this category of use) → 5342 KL
- Domestic purpose → 56 KL
- Processing whereby water gets polluted and the pollutants are easily biodegradable → — KL
- Processing whereby water gets polluted and the pollutants are not easily biodegradable → — KL

The *Applicant* shall regularly submit to the Board the Returns of Water Consumption in the prescribed form and pay the Cess as specified under Section 3 of the said Act.

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(Member Secretary/Chief Engr./ Sr. Env. Engr./ Env. Engr. / Asst. Env. Engr.)

Continued.....

Consent to M/s. Shakambari Ispat & Power Ltd.

for its unit at Vill.- Madandih, P.O.- Bantonia, P.S.- Neturia,

Dist.- Purulia

11. The *Applicant* shall install suitable device for measuring the volume of water consumed for different purposes as mentioned above giving correct result to the satisfaction of the *State Board*.

12. All the stacks connected to various sources of emissions must be designated by numbers such as S-1, S-2, S-3, etc., and this must be painted/displayed to faciliate identification.

13. The *Applicant* shall install comprehensive control system consisting of pollution control equipment as is warranted with reference to generation of air emissions and operate and maintain the same continuously so as to achieve the level of pollutants of the *Standard* as given in Table-II below :

Please ref. to annexure - I

Table-II

Stack No.	Stack height from G.L., (in mts.)	Stack attached to (sources and control system, if any):	Volume $Nm^3/hr.$	Velocity of gas emission m/sec	Concentrations of parameters not to exceed					Frequency of emission sampling
					SPM (mg/Nm^3)	CO (%v/v)				
S-I										
S-2										
S-3										
S-4										
S-5										
S-6										
S-7										
S-8										
S-9										
S-10										

(Member Secretary/Chief Engr./ Sr. Env. Engr. / Env. Engr. / Asst. Env. Engr.)

Continued.....

Consent to M/s Shakambari Ispat & Power Ltd.
for its unit at Vill.- Madandih, P.O.- Bartonia, P.S.- Neturia,
Dist.- Purulia, - 723121

14. The *Applicant* shall provide ports in the stack(s) and other necessary permanent facilities such as ladder, platform, etc. for monitoring/sampling the air emissions and the same shall be made available for inspection and use by the *State Board's* staff as well as *State Board's* authorised agencies.

15. The *Applicant* shall observe the following fuel consumption pattern :-

Sl. No	Type of fuel	Quantity consumed per day	Fuel burning operation where the fuel is used
01	Coal	43975 MT/month	DRI KILN
02	COAL	13960 MT/month	Boilers
03	COKE	2895 MT/month	SEAF
04	Steam Coal	1160 MT/month	-
05	Charcoal	5265 MT/month	-

16. The *Applicant* shall maintain the generation and treatment/disposal of non-hazardous solid waste as specified below :- Please ref. to annexure - II

Type of waste	Quantity	Treatment	Disposal

17. The *Applicant* shall take adequate measures for control of noise levels from its own sources within the premises within the limit given below :-

Time	Limit in dB(A) L_{eq}
Day Time (06 a.m. to 09 p.m.)	75
Night Time (09 p.m. to 06 a.m.)	70

18. The *Applicant* shall at all times maintain good house-keeping, proper working order, and operate efficiently for control of pollution from all sources so as not to cause nuisance to surrounding areas/inhabitants and to achieve compliance with the terms and conditions of the consent.

19. The *Applicant* shall bring about at least 33% of the available open land under the green coverage / plantation.

20. The *Applicant* shall provide for an alternate electric power source sufficient to operate all pollution control facilities installed by the *Applicant* to maintain compliance with the terms and conditions of the consent. In absence of such an alternate electric power source, the *Applicant* shall stop, reduce or otherwise control production to abide by the terms and conditions of the Consent regarding pollution level.

21. The *Applicant* shall install a separate energy meter showing the consumption of energy for operation of pollution control devices.

22. The *Applicant* shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises.

23. The *Applicant* shall provide drainage system for conveying industrial and domestic liquid waste. Storm-water drain shall be kept separate from the drainage system meant for industrial and domestic liquid waste

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(Member Secretary/Chief Engr./ Sr. Env. Engr. / Env. Engr. / Asst. Env. Engr.)

Continued.....

Consent to ...M/s. Shakambari Ispat & Power Ltd.....

for its unit at ...Vill.- Madandih, P.O.-Bastonia, P.S.- Netunia,.....

.....Dist.- Purulia, 723121.....

24. The *Applicant* shall maintain a separate register showing consumption of chemicals used in pollution control systems.

25. The *Applicant* shall get the samples of hazardous wastes/leachates analysed at least once in ..... from the laboratory recognised of the West Bengal Pollution Control Board and ensure that they conform to the limits stipulated. Test reports shall be sent to the Board.

26. The *Applicant* shall provide adequate and safe facility for collection of air, waste water and solid waste samples by the *State Board's* staff as well as *State Board's* authorised agencies.

27. The *Applicant* shall submit to the *State Board* by the 30th September of every year the Environmental Statement Report for the financial year ending 31st March of the current year in the prescribed form (Form -V) as required under the provisions of rule 14 of the Environment (Protection) [Second Amendment] rules, 1992.

28. The *Applicant* shall allow the Officers of the *State Board* to enter into the applicant's premises at any reasonable time to inspect the pollution control systems as well as monitoring and measuring devices in connection with prevention & control of pollution.

29. The *Applicant* shall maintain an Inspection Book in the factory premises which shall be made available to Officers & employees of the *State Board* for inspection, review and to write down any direction or observation as is deemed necessary during the inspection from time to time.

30. The *Application* shall furnish to the *State Board* all information in respect of quality, quantity, rate of discharge, place of discharge of liquid effluent and air emissions.

31. The *Applicant* shall maintain adequate number of qualified and trained personnel among his staff for proper maintenance and operation of the effluent treatment and / or emission control devices and for overall environment management of the industry.

32. The *Applicant* shall have to make registration for the use of groundwater if any, with Central Ground Water Authority.

33. The *Applicant* shall intimate to the *State Board* immediately of any occurrence or apprehension of occurrence of discharge of any poisonous, noxious or pollutants in excess of quality as well as quality as mentioned earlier to any receiving water body/receiving system or to atmosphere owing to accident or other unforeseen incident/event including natural disaster. The *Applicant* Shall (i) take all steps adequate to prevent such accident discharge/release of poisonous, noxious or pollutants and to limit their consequences to persons and the environment, (ii) provide to the persons working on the site with the information, training and equipment including antidotes necessary to ensure their safety and mitigate the accidental release of poisonous noxious or pollutants to the environment.

34. The *Applicant* shall make an application to the *State Board* in the prescribed form for renewal of the consent at least 60 (sixty) days before the date of expiry of this Consent.

35. The *Applicant* shall not make any alternation/modification/expansion in the existing manufacturing process and equipment as well as the pollution control system without prior approval of the Board.

36. The *Applicant* shall comply with the conditions as laid down in the Manufacture, Storage and Import of hazardous Chemicals Rules, 1989 and Hazardous Wastes (Management & Handling) Rules, 1989.

Additional Conditions

31/07/23

(Member Secretary/Chief Engr./ Sr. Env. Engr. / Env. Engr. / Asst. Env. Engr.)

Annexure – II to CTO No. CO 134682

Special Conditions to M/s. Shakambari Ispat & Power Ltd., Vill – Madandih, PO – Bartoria, PS – Neturia, Dist. – Purulia, Pin – 723 121.

Table-II

Stack No.	Stack height from G.L. (in mts.)	Stack Attached to (sources and control system, if any)	Volume Nm^3/hr	Velocity of gas emission m/sec	Concentration of parameters not to exceed				Frequency of emission sampling
					PM (mg/Nm^3)	CO (%v/v)			
1	35.0 m	2x100 TPD DRI Kiln (1 & 2) followed by separate ESP and 2x10 TPH WHRB.	-	-	100	1	-	-	Quarterly
2.	35.0 m	2x100 TPD DRI Kiln (3 & 4) followed by separate ESP and 2x10 TPH WHRB.	-	-	100	1	-	-	Quarterly
3.	30.0 m	Bag Filter for Iron Circuit & Day Bin for 4x100 TPD DRI Kiln 1, 2, 3 & 4.	-	-	50	-	-	-	Quarterly
4.	30.0 m	Bag Filter for Coal Circuit for 4x100 TPD DRI Kiln 1, 2, 3 & 4	-	-	50	-	-	-	Quarterly
5.	30.0 m	Bag Filter for I. Bin & Product House for 4x100 TPD DRI Kiln 1, 2, 3 & 4	-	-	50	-	-	-	Quarterly
6.	72.0 m	2x350 TPD DRI (Kiln No. 5 & 6) followed by separate ESP and 2x35.5 TPH WHRB	-	-	50	-	-	-	Quarterly
7.	72.0 m	1x600 TPD DRI (Kiln No.7) followed by ESP and 1x64 TPH WHRB	-	-	50	-	-	-	Quarterly
8.	30.0 m	Bag Filter for I. Bin/PSB of DRI Kiln 2x350 TPD	-	-	50	-	-	-	Quarterly
9.	30.0 m	Bag Filter for I. Bin/PSB of DRI Kiln 1x600 TPD	-	-	50	-	-	-	Quarterly
10.	30.0 m	Bag Filter common for Day Bin of DRI Kiln 2x350 TPD & DRI 1x600 TPD	-	-	50	-	-	-	Quarterly
11.	30.0 m	Bag Filter common for Iron Circuit of DRI Kiln 2x350TPD & DRI 1x600 TPD (Kiln 5, 6 & 7)	-	-	50	-	-	-	Quarterly
12.	30.0m	Bag Filter for Coal Circuit of DRI Kiln 2x350 TPD	-	-	50	-	-	-	Quarterly
13.	30.0 m	Bag Filter for Coal Circuit of DRI Kiln 1x600 TPD	-	-	50	-	-	-	Quarterly

14.	30.0 m	Bag Filter common for Product House of DRI Kiln 2x350 TPD & DRI 1x600TPD	-	-	50	-	-	-	Quarterly
15.	30.0 m	7x2.5T Induction Furnace with three (03) nos. of Bag Filters Hoppers	-	-	50	1	-	-	Quarterly
16.	32.0 m	FDC & Bag filter (SAF-I, 9 MVA)	-	-	50	1	-	-	Quarterly
17.	32.0 m	FDC & Bag filter (SAF-II, 9 MVA)	-	-	50	1	-	-	Quarterly
18.	32.0 m	FDC & Bag filter (SAF-III, 9 MVA)	-	-	50	1	-	-	Quarterly
19.	32.0 m	FDC & Bag filter (SAF-IV, 9 MVA)	-	-	50	1	-	-	Quarterly
20.	60.0 m	ESP of AFBC Boiler (36TPH)	-	-	30	-	-	-	Quarterly
21.	30.0 m	Bag Filter of CHP for AFBC Boiler	-	-	50	-	-	-	Quarterly
22.	92.0 m	ESP of CFBC Boiler (100TPH)	-	-	30	-	-	-	Quarterly
23.	30.0 m	Bag Filter of CHP for CFBC Boiler	-	-	50	-	-	-	Quarterly

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Environmental Engineer
Asansol Regional Office

Annexure – III to CTO No. CO 134682

Special Conditions to M/s. Shakambari Ispat & Power Ltd., Vill – Madandih, PO – Bartoria, PS – Neturia, Dist. – Purulia, Pin – 723 121.

Type of Waste	Quantity (TPM)	Treatment	Disposal
IF Bag Filter Dust	680	-	Shall be used for landfilling
MS scale from CCM from SMS	340	-	Shall be reused in induction furnace/shall be used for producing Fe-Si or Fe-Si-Cr.
IF Slag	4585	-	Shall be used as aggregates for landfilling/road making after metal recovery
End Cuts/Mis roll from Rolling Mill	845	-	Shall be reused in IF
Mill Scale from Rolling Mills	196	-	Shall be used in IF/provided to recyclers
Dolochar from DRI	9975	-	Shall be used for captive power generation if AFBC/CFBC boilers
Wet Scrapper Sludge from DRI	450	-	Shall be used in CPP for power generation.
Bag Filter Dust from DRI	2950	-	Coal Dust shall be used in CPP and Iron dust shall be provided to the pellet plant
Bottom ash from CFBC & AFBC boiler	3800	-	Shall be used for land filling/provided to brick manufacturing units
Fly-ash/ESP dust from CFBC, AFBC & DRI	18000	-	Shall be provided bricks & cement manufacturing units/used for abandoned mines filling.
From Ferro Alloys division: Fe-Mn Slag OR	4740	-	Shall be used for the production of Si-Mn.
Si-Mn Slag OR	4475	-	Shall be used for construction of roads or filling of low-lying area
Fe-Si Slag OR	265	-	Shall be used in Ind. Furnace
Fe-Cr Slag OR	4740	-	Slag shall be further processed in a grinding and Metal Recovery Plant and shall be used for construction purposes after the TCLP test
Pig Iron Slag	2630	-	Shall be sold to cement manufacturers

Type of Waste	Quantity (TPM)	Treatment	Disposal
Bag Filter Dust from Ferro Division	265	-	Shall be recycled in process/ provided for sintering, Briquetting, in Cement plant & concreting according to quality of dust

31/07/13

Environmental Engineer
Asansol Regional Office

Government of West Bengal

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Authorised Signatory
(E-signed)
Department of IT&E

WEST BENGAL POLLUTION CONTROL BOARD
Paribesh Bhawan, 10A, Block LA, Sector III
Salt Lake City, Bidhan Nagar, Kolkata – 700 106, INDIA
Website : www.wbpcb.gov.in, e-mail : wbpcbnet@wbpcb.gov.in

Category of the Industry : RED
Application Type: CTO
CTO No.: WBPCB/4148205/2024 **Date : 26/04/2024**

Consent to Operate (CTO) under Section 25 & 26 of the Water (Prevention and Control of Pollution) Act, 1974 as amended and Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended.

Reference: Application No.: 4148205

The West Bengal Pollution Control Board (hereinafter referred to as State Board) under the provisions of Section 25 & 26 of the Water (Prevention and Control of Pollution) Act, 1974 as amended and Section 21 of the Air (Prevention and control of Pollution) Act, 1981 as amended, and Rules and Orders made thereunder hereby grants Consent to **SHAKAMBHARI ISPAT & POWER LTD.** (hereinafter referred to as Applicant) for its unit located at **Vill-Madandih, PO-Bartoria, PS-Neturia, Dist-Purulia, Pin-723121** for the period from **26/04/2024** to **31/07/2028** to operate the industrial unit/project and to discharge liquid effluent and gaseous emission from the premises / land of the industrial unit/project, in accordance with the conditions as mentioned below, provided that on any day at any instance the quantity and quality of liquid discharge and gaseous emission shall not exceed the permissible limit as specified in this consent letter and in the Environment (Protection) Act, 1986 and Rules thereunder, as amended.

Breach of the conditions and / or failure to comply with the directions as mentioned below shall render the industry/project liable for prosecution under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 as amended and Section 21 of the Air (Prevention and control of Pollution) Act, 1981 as amended.

The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alter the conditions of this consent letter giving one month's notice to the industry.

Conditions :

1 This Consent is valid for the following activities :

Sl.No	Name of Activity/Products/By-products	Production Capacity (Per Month)
1	Production from existing 4x9MVA SAF by Capacity Enhancement/Product Modification: Fe-Mn OR	97029 Metric Tonnes/Year
2	Si-Mn OR	71424 Metric Tonnes/Year
3	Rolling Mill with wire drawing facility 1000TPD (New Installation)	360000 Metric Tonnes/Year
4	Additional Production of MS Billet from Existing 7x25T Induction Furnace by Capacity Enhancement	204980 Metric Tonnes/Year
5	Dolochar (By product)	79200 Metric Tonnes/Year
6	Fe-Mn Slag (By product)	87325 Metric Tonnes/Year
7	Total Additional Sponge Iron Production by Capacity Enhancement of Existing DRI Kilns: 30400 TPA from 1x400TPD, 53200 TPA from 2x350TPD and 45600 TPA from 1x600TPD	129200 Metric Tonnes/Year
8	Sponge Iron from DRI Kiln 1x600TPD (New Installation)	237600 Metric Tonnes/Year
9	MS Billet Production from 2x25T Induction Furnace (New Installation)	175000 Metric Tonnes/Year
10	High Carbon Ferro Chrome OR	67665 Metric Tonnes/Year
11	Ferro Silico Chrome OR	44332 Metric Tonnes/Year
12	Fe-Si OR	32141 Metric Tonnes/Year
13	Pig Iron or in combination of any	107136 Metric Tonnes/Year
14	Captive Power Generation from 64 TPH WHRB attached with 1x600TP DDRI Kiln (New Installation)	16 Megawatt
15	Additional Captive Power Generation of 01MW from 64TPH WHRB attached with existing DRI Kiln 1x600TPD	01 Megawatt

2 The industry shall remain responsible for quantity and quality of liquid effluent and air emission.

3 Daily waste water generation and discharge shall not exceed :

No. of outlets	Source of Waste Water	Quantity in Kilo Liters/day	Place of discharge
	Process	Recycle & Reuse after treatment in ETP & Neutralization/Homogenization in Catch Pits	No effluent shall be discharged outside the factory premises

4 To bring into any altered or new outlet / outfall or to change the place of discharge, the industry shall have to inform the Board and obtain prior permission of the Board in this effect.

5 The industry shall provide comprehensive facility for treatment of industrial liquid waste and domestic liquid waste (sewage, sullage and liquid effluent generated from canteen), and operate and maintain the same continuously so that the quality of final effluent conforms to the Standard as given below:

Outlet No.	Nature of effluent	Parameters and standard			Frequency of sampling
		Parameters	Standards	Unit	

Provisions shall be made to install sensor-based Water Quality monitoring system and flow meter to share the information with the state board on a Real Time basis.

6 Daily water consumption for the following purposes shall not exceed

SL NO.	Purpose of Water Use	Quantity (KL/Day)
1.	Domestic	14.0
2.	Cooling	900.0
3.	Boiler	460.0
4.	Others(Dust Suppression)	140.0

7 The Industry shall install suitable digital device for measuring the volume of water consumed for different purposes as mentioned above giving correct result to the satisfaction of the State Board. The device shall be able to provide information to disseminate the quantity on a real time basis.

8 All the stacks connected to various sources of emissions must be designated by numbers.

9 The industry shall install comprehensive pollution control equipment and operate and maintain the same to conform to the standard as given below:

Stack height from ground level (m	Stack attached to emission sources	Capacity of emission source	Cons up-Unit	Fuel details		Control system(if any)	Concentrations of parameters not to exceed							Frequency of sampling	Remarks
				Fuel used	Quantity		PM(mg/Nm3)	CO(%)	Acid Mist(mg/Nm3)	Pb(mg/Nm3)	SO2(mg/Nm3)	NOX(mg/Nm3)	Others		
30	Induction furnace	25	Metric Tonne	Electricity	0 Metric Tonnes/Day		30	1	-	-	-	-	-	Quarterly	Bag Filter Common for 2x25T Induction Furnace & 1x30T LRF
30	Fugitive Emmission	2000	Metric Tonnes/Day		0 Metric Tonnes/Day		30	-	-	-	-	-	--	Quarterly	Bag Filter common for I.Bin/ PSB of DRI Kiln 2x600 TPD
30	Fugitive Emmission	5000	Metric Tonnes/Day		0 Metric Tonnes/Day		30	-	-	-	-	-	-	Quarterly	Bag Filter common for Product House of DRI Kilns 2x350 TPD & 2x600 TPD
30	Fugitive Emmission	4500	Metric Tonnes/Day		0 Metric Tonnes/Day		30	-	-	-	-	-	-	Quarterly	Bag Filter common for Iron Circuit of DRI Kiln 2x350 TPD & DRI 2x600 TPD

30	Fugitive Emmission	4000	Metric Tonnes/Day		0 Metric Tonnes/Day		30	-	-	-	-	-	-	Quarterly	Bag Filter common for Coal Circuit of DRI Kiln 2x600 TPD
30	Fugitive Emmission	1200	Metric Tonnes/Day		0 Metric Tonnes/Day		30	-	-	-	-	-	-	Quarterly	Bag Filter common with Doloc har handling system for DRI 2x350 TPD & DRI 2x600 TPD
30	Fugitive Emmission	4000	Metric Tonnes/Day		0.8 Metric Tonnes/Day		30	-	-	-	-	-	-	Quarterly	Bag Filter common with Day Bin for DRI Kiln 1x350 TPD & DRI 1x600 TPD
72	Kilns	600	Metric Tonnes/Day	Coal	0.8 Metric Tonnes/Day		30	1	-	-	-	-	-	Quarterly	RCC stack attached with ESP for 1x64 TPH WHRB of 1x600 TPD DRI (Kiln No 8)
11	DG Set	1010	KVA	HSD	0.8 Metric Tonnes/Day		150	1	-	-	-	-	-	Yearly	5X1010 KVA DG Sets

9	DG Set	550	KVA	HSD	0.8 Metric Tonnes/Day		150	1	-	-	-	-	-	Yearly	1x550 KVA DG Set

10 The industry shall provide ports in the stack(s) and other necessary permanent facilities such as ladder, platform etc. for monitoring / sampling the air emissions and the same shall be made available for inspection and use by the State Board's staff as well as State Board's authorized agencies.

11 Waste generation, treatment and disposal shall be as specified below :

S.No	Description of Waste	Quantity	Treatment and Disposal
1	IF Bag Filter Dust	635 Metric Tonnes/Month	Shall be used for land filling
2	MS scale from CCM from SMS	325 Metric Tonnes/Month	Shall be reused in induction furnace/shall be used for production of Fe-Si or Fe-Si-Cr.
3	IF & LRF Salg	4730 Metric Tonnes/Month	Shall be used as aggregates for land filling/road making after metal recovery
4	Mill Scale from Rolling Mills	234 Metric Tonnes/Month	Shall be used in IF/provided to recyclers
5	End Cuts/Mis roll from Rolling Mill	965 Metric Tonnes/Month	Shall be used in IF
6	Dolochar from DRI	7200 Metric Tonnes/Month	Shall be used for captive power generation if AFBC/CFBC boilers
7	Wet Scrapper Sludge from DRI	295 Metric Tonnes/Month	Shall be used in CPP for power generation.
8	Bag Filter Dust from DRI	2230 Metric Tonnes/Month	Coal Dust shall be used in CPP and Iron dust shall be provided to pellet plant
9	Si-Mn Slag OR	5204 Metric Tonnes/Month	Shall be used for construction of roads or filling of low-lying area
10	Fe-Si Slag OR	138 Metric Tonnes/Month	Shall be used in Ind. Furnace
11	Fe-Cr Slag OR	5220 Metric Tonnes/Month	Slag shall be further processed in grinding and Metal Recovery Plant and shall be used for construction purpose after TCLP test
12	Fe-Si-Cr Slag OR	190 Metric Tonnes/Month	Shall be used in cement manufacturing industries as a raw material as well as for construction and road filling material after undergoing TCLP Test
13	Pig Iron Slag or in combination of any	4592 Metric Tonnes/Month	Shall be sold to cement manufacturers
14	Fe-Mn Slag OR	7485 Metric Tonnes/Month	Shall be used for production of Si-Mn.
15	Bag Filter Dust from Ferro Division	450 Metric Tonnes/Month	Shall be recycled in process/ provided for sintering, Briquetting, in Cement plant & concreting according to quality of dust

The Industry shall obtain Authorisation for waste and also register for EPR wherever applicable.

12 The industry shall take adequate measures for control of noise level from its own sources within the premises within the limit given below :

Time	Limit in dB (A) Leq
Day time (06 a.m. to 10 p.m.)	65
Night time (10 p.m. to 06 a.m.)	55

Noise barriers should be installed if the Noise Level is found to be exceeding the desired levels.

13 The industry shall at all times maintain good house-keeping and control pollution (including fugitive emissions) from all sources to maintain clean environment in & around factory premises and in surrounding areas.

14 The Industry shall bring about at least 33% of the total land area under the tree cover.

15 The Industry shall provide sufficient alternate electric power source like Green DG or Storage Battery System etc. to operate all pollution control facilities. In absence of such alternate power source, the production shall be stopped/controlled to conform to the conditions of the Consent.

16 The industry shall install a separate energy meter showing the consumption of energy for operation of pollution control devices and shall install suitable device for measuring the volume of water consumed for different purposes as mentioned in Sl.No. 3.

17 The Industry shall provide drainage system for discharge of industrial and domestic effluent and a separate drainage system for storm-water.

18 The industry shall maintain a separate register showing consumption of chemicals used in pollution control systems.

19 The Industry shall get the samples of hazardous wastes / leachates analysed at least once in a year from a laboratory recognised by the West Bengal Pollution Control Board and ensure that they conform to the limits stipulated. Test reports shall be sent to the Board.

20 The Industry shall submit the Environmental Statement Report for the financial year ending 31st March of the current year in the prescribed form (Form V) as required under the provisions of Rule 14 of the Environment (Protection) [Second Amendment] Rules 1992 by 30th September of every year, to the WBPCB.

21 The Industry shall allow the officers of the State Board to enter into the premises of the unit at any reasonable time to inspect the pollution control systems and shall provide adequate and safe facility for collection of air, wastewater and solid waste samples for monitoring by the State Board as well as by authorized agencies of the State Board, as and when required by them.

22 The industry shall maintain an Inspection Book in the factory premises which shall be made available to inspecting officers of the State Board for inspection, review and to write down any direction or observation as is deemed necessary during the inspection.

23 The Industry shall furnish to the State Board all information in respect of quality, quantity, rate of discharge, place of discharge of liquid effluent and air emission.

24 The Industryshall maintain adequate number of qualified and trained personnel among its staff for propermaintenance and operation of the effluent treatment and/or emission control devices and for overallenvironment management of the industry.

25 The Industry shall have to make registration for the use of groundwater if any, with State Water Investigation Directorate (SWID).

26 The Industry shall intimate to the State Board immediately of any occurrence or apprehension of occurrence of discharge of any poisonous, noxious or pollutants in excess of quality as well as quantity as mentioned earlier to any receiving water body/receiving system or to atmosphere owing to accident or other unforeseen incident/event including natural disaster. The Applicant shall (i) take all steps adequate to prevent such accident discharge / release of poisonous, noxious or pollutants and to limit their consequences to persons and the environment, (ii) provide to the persons working on the site with the information, training and equipment including antidotes necessary to ensure their safety and mitigate the accidental release of poisonous noxious or pollutants to the environment.

27 If the Industry is using Diesel Generator set or generating any other hazardous waste, it should install a Digital Display Board to discriminate all information as stipulated in this regard.

28 The industry shall make an application to the State Board in the prescribed form for renewal of the consent at lease 120 (one hundred & twenty) days before the date of expiry of this Consent.

29 The industry shall not make any alteration / expansion / modification in the existing manufacturing process and equipment, pollution control system and shall not alter or bring in any new outlet/outfall or stack or change the place of discharge, without prior approval of the Board.

30 The industry shall comply with all applicable Environmental Acts and Rules.

31 The Industry shall comply with the provisions of relevant Waste Management Rules and also submit Annual Returns / Manifests on regular basis.

32 Concealing factual data or submission of false or fabricated data/information may result in revocation of Consent to Operate and attract action under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981.

Special Conditions:

1.The unit shall strictly adhere to the conditions imposed in the Environmental Clearance issued by MoEF&CC,GoI dt. 19.07.2023 and Consent to Establish issued by the State Board dt. 18.08.2023.

2.The emission standards have been prescribed as per the condition imposed in the Consent to Establish issued by the State Board vide memo no.422-2N-21/2012(E)-Part-I dt. 18.08.2023.

3.The ferro alloys production quantity of 63150 TPA as mentioned in the Consent to Operate issued by the State Board vide certificate no. CO134682 dt.31.07.2023 is replaced by the quantities of different ferro alloys as mentioned in this Consent to Operate.

Any violation of the aforesaid conditions shall entail cancellation of this Consent for Operate.

For and on behalf of West Bengal Pollution Control Board

26/04/2024

Senior Environmental Engineer
Operation & Execution Cell

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Government of West Bengal

This document having UDIN **24-G-GA000004-C-1720784686174** has been created by **WEST BENGAL POLLUTION CONTROL BOARD** with authorised person's Aadhaar no XXXXXXXX9477 on **05:14PM, July 12, 2024.**

This document is available at UDIN platform till 05:14PM, July 12, 2029.

Authorised Signatory
(E-signed)
Department of IT&E

WEST BENGAL POLLUTION CONTROL BOARD
Paribesh Bhawan, 10A, Block LA, Sector III
Salt Lake City, Bidhan Nagar, Kolkata – 700 106, INDIA
Website : www.wbpcb.gov.in, e-mail : wbpcbnet@wbpcb.gov.in

Category of the Industry : RED
Application Type: CTO
CTO No.: WBPCB/5166172/2024 **Date : 12/07/2024**

Consent to Operate (CTO) under Section 25 & 26 of the Water (Prevention and Control of Pollution) Act, 1974 as amended and Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended.

Reference: Application No.: 5166172

The West Bengal Pollution Control Board (hereinafter referred to as State Board) under the provisions of Section 25 & 26 of the Water (Prevention and Control of Pollution) Act, 1974 as amended and Section 21 of the Air (Prevention and control of Pollution) Act, 1981 as amended, and Rules and Orders made thereunder hereby grants Consent to **SHAKAMBHARI ISPAT & POWER LTD.** (hereinafter referred to as Applicant) for its unit located at **Vill-Madandih, PO-Bartoria, PS-Neturia, Dist-Purulia, Pin-723121** for the period from **12/07/2024** to **31/07/2028** to operate the industrial unit/project and to discharge liquid effluent and gaseous emission from the premises / land of the industrial unit/project, in accordance with the conditions as mentioned below, provided that on any day at any instance the quantity and quality of liquid discharge and gaseous emission shall not exceed the permissible limit as specified in this consent letter and in the Environment (Protection) Act, 1986 and Rules thereunder, as amended.

Breach of the conditions and / or failure to comply with the directions as mentioned below shall render the industry/project liable for prosecution under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 as amended and Section 21 of the Air (Prevention and control of Pollution) Act, 1981 as amended.

The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alter the conditions of this consent letter giving one month's notice to the industry.

Conditions :

1 This Consent is valid for the following activities :

Sl.No	Name of Activity/Products/By-products	Production Capacity (Per Month)
1	Si-Mn OR	35562 Metric Tonnes/Year
2	Fe-Mn OR	48515 Metric Tonnes/Year
3	Fe-Si OR	16071 Metric Tonnes/Year
4	High Carbon Ferro Chrome (HCFC) OR	33833 Metric Tonnes/Year
5	Fe-Si-Cr OR	22166 Metric Tonnes/Year
6	Pig Iron OR in combination of any	53054 Metric Tonnes/Year
7	Fe-Mn Slag (By product)	43663 Metric Tonnes/Year
8	Metal Recovery from 1x25TPH Metal Recovery Plant	25 Metric Tonnes/Hour

2 The industry shall remain responsible for quantity and quality of liquid effluent and air emission.

3 Daily waste water generation and discharge shall not exceed :

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No. of outlets	Source of Waste Water	Quantity in Kilo Liters/day	Place of discharge
No industrial waste water shall be discharged outside the factory premises	Waste water from cooling tower blowdown and softener backwash	56	Zero Liquid Discharge shall be maintained by recycle & reuse practices

4 To bring into any altered or new outlet / outfall or to change the place of discharge, the industry shall have to inform the Board and obtain prior permission of the Board in this effect.

5 The industry shall provide comprehensive facility for treatment of industrial liquid waste and domestic liquid waste (sewage, sullage and liquid effluent generated from canteen), and operate and maintain the same continuously so that the quality of final effluent conforms to the Standard as given below:

Outlet No.	Nature of effluent	Parameters and standard			Frequency of sampling
		Parameters	Standards	Unit	

Provisions shall be made to install sensor-based Water Quality monitoring system and flow meter to share the information with the state board on a Real Time basis.

6 Daily water consumption for the following purposes shall not exceed

SL NO.	Purpose of Water Use	Quantity (KL/Day)
1.	Domestic	3.0
2.	Cooling	200.0
3.	Others(Dust Suppression)	56.0

7 The Industry shall install suitable digital device for measuring the volume of water consumed for different purposes as mentioned above giving correct result to the satisfaction of the State Board. The device shall be able to provide information to disseminate the quantity on a real time basis.

8 All the stacks connected to various sources of emissions must be designated by numbers.

9 The industry shall install comprehensive pollution control equipment and operate and maintain the same to conform to the standard as given below:

Stack height from ground level (m	Stack attached to emission sources	Capacity of emission source	Cons up-Unit	Fuel details		Control system(if any)	Concentrations of parameters not to exceed							Frequency of sampling	Remarks
				Fuel used	Quantity		PM(mg/Nm3)	CO(%)	Acid Mist(mg/Nm3)	Pb(mg/Nm3)	SO2(mg/Nm3)	NOX(mg/Nm3)	Others		
32	Electric arc furnace	267750	Cubic Meters/Hour	Electricity	7.2 Mega Watt Hour	Bag Filter	30							Quarterly	MS Stack attached with 1x9MVA SEAF
32	Electric arc furnace	267750	Cubic Meters/Hour	Electricity	7.2 Mega Watt Hour	Bag Filter	30							Quarterly	MS Stack attached with 1x9MVA SEAF

10 The industry shall provide ports in the stack(s) and other necessary permanent facilities such as ladder, platform etc. for monitoring / sampling the air emissions and the same shall be made available for inspection and use by the State Board's staff as well as State Board's authorized agencies.

11 Waste generation, treatment and disposal shall be as specified below :

S.No	Description of Waste	Quantity	Treatment and Disposal
1	Fe-Mn Slag OR	43663 Metric Tonnes/Year	Shall be used for the production of Si-Mn.
2	Si-Mn Slag OR	30355 Metric Tonnes/Year	Shall be used as aggregates for land filling/road making
3	Fe-Cr Slag OR	30449 Metric Tonnes/Year	Slag shall be further processed in grinding and Metal Recovery Plant and shall be used for construction purpose after TCLP test.
4	Fe-Si Slag OR	804 Metric Tonnes/Year	Fe-Si Slag will be provided to cement manufacturing industries as a raw material & used for medium carbon silico manganese production purpose.
5	Fe-Si-Cr Slag OR	1108 Metric Tonnes/Year	This slag will be used in cement manufacturing industries as a raw material as well as for construction and Road filling material after undergoing TCLP Test.
6	Pig Iron Slag OR in combination of any	26784 Metric Tonnes/Year	Pig Iron Slag will be sold to cement manufacturing industries as a raw material.
7	Bag Filter dust from SAF (Average)	690 Metric Tonnes/Year	Shall be recycled in process/provided to Sintering, Briquetting units, to Cement plant & concreting according to quality of dust.

The Industry shall obtain Authorisation for waste and also register for EPR wherever applicable.

12 The industry shall take adequate measures for control of noise level from its own sources within the premises within the limit given below :

Time	Limit in dB (A) Leq
Day time (06 a.m. to 10 p.m.)	65
Night time (10 p.m. to 06 a.m.)	55

Noise barriers should be installed if the Noise Level is found to be exceeding the desired levels.

13 The industry shall at all times maintain good house-keeping and control pollution (including fugitive emissions) from all sources to maintain clean environment in & around factory premises and in surrounding areas.

14 The Industry shall bring about at least 33% of the total land area under the tree cover.

15 The Industry shall provide sufficient alternate electric power source like Green DG or Storage Battery System etc. to operate all pollution control facilities. In absence of such alternate power source, the production shall be stopped/controlled to conform to the conditions of the Consent.

16 The industry shall install a separate energy meter showing the consumption of energy for operation of pollution control devices and shall install suitable device for measuring the volume of water consumed for different purposes as mentioned in Sl.No. 3.

17 The Industry shall provide drainage system for discharge of industrial and domestic effluent and a separate drainage system for storm-water.

18 The industry shall maintain a separate register showing consumption of chemicals used in pollution control systems.

19 The Industry shall get the samples of hazardous wastes / leachates analysed at least once in a year from a laboratory recognised by the West Bengal Pollution Control Board and ensure that they conform to the limits stipulated. Test reports shall be sent to the Board.

20 The Industry shall submit the Environmental Statement Report for the financial year ending 31st March of the current year in the prescribed form (Form V) as required under the provisions of Rule 14 of the Environment (Protection) [Second Amendment] Rules 1992 by 30th September of every year, to the WBPCB.

21 The Industry shall allow the officers of the State Board to enter into the premises of the unit at any reasonable time to inspect the pollution control systems and shall provide adequate and safe facility for collection of air, wastewater and solid waste samples for monitoring by the State Board as well as by authorized agencies of the State Board, as and when required by them.

22 The industry shall maintain an Inspection Book in the factory premises which shall be made available to inspecting officers of the State Board for inspection, review and to write down any direction or observation as is deemed necessary during the inspection.

23 The Industry shall furnish to the State Board all information in respect of quality, quantity, rate of discharge, place of discharge of liquid effluent and air emission.

24 The Industryshall maintain adequate number of qualified and trained personnel among its staff for propermaintenance and operation of the effluent treatment and/or emission control devices and for overallenvironment management of the industry.

25 The Industry shall have to make registration for the use of groundwater if any, with State Water Investigation Directorate (SWID).

26 The Industry shall intimate to the State Board immediately of any occurrence or apprehension of occurrence of discharge of any poisonous, noxious or pollutants in excess of quality as well as quantity as mentioned earlier to any receiving water body/receiving system or to atmosphere owing to accident or other unforeseen incident/event including natural disaster. The Applicant shall (i) take all steps adequate to prevent such accident discharge / release of poisonous, noxious or pollutants and to limit their consequences to persons and the environment, (ii) provide to the persons working on the site with the information, training and equipment including antidotes necessary to ensure their safety and mitigate the accidental release of poisonous noxious or pollutants to the environment.

27 If the Industry is using Diesel Generator set or generating any other hazardous waste, it should install a Digital Display Board to discriminate all information as stipulated in this regard.

28 The industry shall make an application to the State Board in the prescribed form for renewal of the consent at lease 120 (one hundred & twenty) days before the date of expiry of this Consent.

29 The industry shall not make any alteration / expansion / modification in the existing manufacturing process and equipment, pollution control system and shall not alter or bring in any new outlet/outfall or stack or change the place of discharge, without prior approval of the Board.

30 The industry shall comply with all applicable Environmental Acts and Rules.

31 The Industry shall comply with the provisions of relevant Waste Management Rules and also submit Annual Returns / Manifests on regular basis.

32 Concealing factual data or submission of false or fabricated data/information may result in revocation of Consent to Operate and attract action under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981.

Special Conditions:

1.The unit shall strictly adhere to the conditions imposed in the Environmental Clearance(EC) issued by MoEF&CC,GoI dt. 19.07.2023 and Consent to Establish (CTE) issued by the State Board dt. 18.08.2023.

2.The emission standards have been prescribed as per the condition imposed in the Consent to Establish issued by the State Board vide memo no.422-2N-21/2012(E)-Part-I dt. 18.08.2023.

Any violation of the aforesaid conditions shall entail cancellation of this Consent for Operate.

For and on behalf of West Bengal Pollution Control Board

12/07/2024

Senior Environmental Engineer
Operation & Execution Cell

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ANNEXURE- 8

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Stack Emission		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/I		Report No.	:	ENV/25/Sep./TR(A)/I/24-25		

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	Rotary Kiln No. 1 & 2 100 TPD each attached to common Stack			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	35.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	2.0
Capacity	:	100 TPD (each)	Height of sampling port (mtr.) (from G.L.)	:	15.0
Emission Due to	:	Combustion of Coal & Reduction of Fe-Ore			
Fuel Used	:	Coal	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	5.12 MT/hr./Kiln			
Pollution Control Device	:	W.H.R.B with E.S.P			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS
1.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) : 2019	:	453.17
2.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	11.0
3.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0
4.	a) Concentration of Particulate Matter (at 11% CO_2)	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11	:	36.92
	b) Concentration of Particulate Matter (at 12% CO_2)	mg/Nm^3	(Vol.11.07) : 2017	:	40.27

Remarks : Result relates only to the sample tested.
: During monitoring both kilns were in operation.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	11.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Stack Emission		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/II		Report No.	:	ENV/25/Sep./TR(A)/II/24-25		

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	Rotary Kiln No. 3 & 4 attached to common Stack			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	35.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	2.0
Capacity	:	100 TPD (each)	Height of sampling port (mtr.) (from G.L.)	:	15.0
Emission Due to	:	Combustion of Coal & Reduction of Fe-Ore			
Fuel Used	:	Coal	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	5.12 MT/hr./Kiln			
Pollution Control Device	:	E.S.P with W.H.R.B			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS
1.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) : 2019	:	422.15
2.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	11.2
3.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0
4.	a) Concentration of Particulate Matter (at 11.2% CO_2)	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11	:	39.60
	b) Concentration of Particulate Matter (at 12% CO_2)	mg/Nm^3	(Vol.11.07) : 2017	:	42.42

Remarks : Result relates only to the sample tested.
: During monitoring both kilns were in operation.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.			Type of Industry	:	Steel & Power Unit	
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121			Sampling Date	:	11.09.2024	
					Period of Analysis	:	14.09.2024 – 14.09.2024	
					Date of Issue	:	16.09.2024	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	: No	Type of Sample	:	Stack Emission	
Sample Condition	:	Sealed	Sample ID No.	: ENV/25/Sep./A/III	Report No.	:	ENV/25/Sep./TR(A)/III/24-25	

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	Rotary Kiln No. 5 & 6 2 x 350 TPD attached to common Stack			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	72.0
Materials of Construction	:	R.C.C	Stack I.D. at sampling point (mtr.)	:	2.60
Capacity	:	350 TPD (each)	Height of sampling port (mtr.) (from G.L.)	:	51.2
Emission Due to	:	Combustion of Coal & Reduction of Fe-Ore			
Fuel Used	:	Coal	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	13.5 TPH/Kiln			
Pollution Control Device	:	W.H.R.B with E.S.P			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS
1.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) : 2019	:	498.90
2.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	11.6
3.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0
4.	a) Concentration of Particulate Matter (at 11.6% CO_2)	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11	:	41.52
	b) Concentration of Particulate Matter (at 12% CO_2)		(Vol.11.07) : 2017	:	42.95

Remarks : Result relates only to the sample tested.
: During monitoring both kilns were in operation

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.				Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121				Sampling Date	:	11.09.2024		
						Period of Analysis	:	14.09.2024 – 14.09.2024		
						Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Stack Emission		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/IV	Report No.	:	ENV/25/Sep./TR(A)/IV/24-25		

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	CFBC Boiler			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	92.0
Materials of Construction	:	RCC	Stack I.D. at sampling point (mtr.)	:	2.60
Capacity	:	100 TPH	Height of sampling port (mtr.) (from G.L.)	:	51.2
Emission Due to	:	Combustion of Coal & Dolochar			
Fuel Used	:	Coal & Dolochar	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Coal – 12.5 MT/hr. & Dolochar – 8.33 MT/hr.			
Pollution Control Device	:	E.S.P			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS
1.	Concentration of SO_2 (at 6% O_2)	mg/Nm^3	IS 11255 (Part 2) : 2019	:	89.84
2.	Concentration of NO_x (at 6% O_2)	mg/Nm^3	IS 11255 (Part 7) : 2017 / ASTM D 1608-98, Sec. 11 (Vol. 11.07) : 2017	:	71.69
3.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	10.8
4.	Concentration of O_2	% (v/v)	EPA Method 3 : 2017	:	8.2
5.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0
6.	a) Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017	:	20.02
	b) Concentration of Particulate Matter (at 6% O_2)	mg/Nm^3		:	23.45

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Stack Emission		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/V		Report No.	:	ENV/25/Sep./TR(A)/V/24-25		

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	Rotary Kiln (No.8)			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	72.0
Materials of Construction	:	RCC	Stack I.D. at sampling point (mtr.)	:	2.17
Capacity	:	600 TPD	Height of sampling port (mtr.) (from G.L.)	:	35.0
Emission Due to	:	Combustion of Coal, Iron Ore & Dolomite			
Fuel Used	:	Coal	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	14.4 TPH/hr.			
Pollution Control Device	:	E.S.P			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS
1.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) : 2019	:	431.20
2.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	11.8
3.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0
4.	a) Concentration of Particulate Matter (11.8% CO_2)	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11	:	23.65
	b) Concentration of Particulate Matter (at 12% CO_2)	mg/Nm^3	(Vol.11.07) : 2017	:	24.05

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.				Type of Industry	:	Steel & Power Unit			
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121				Sampling Date	:	12.09.2024			
						Period of Analysis	:	14.09.2024 – 14.09.2024			
						Date of Issue	:	16.09.2024			
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Stack Emission			
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/VI	Report No.	:	ENV/25/Sep./TR(A)/VI/24-25			

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	SEAF (No.1)			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	32.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	1.80
Capacity	:	9.0 MVA	Height of sampling port (mtr.) (from G.L.)	:	22.0
Emission Due to	:	Reduction of Mn-Ore			
Fuel Used	:	N.A. (Electrically Operated)	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Nil			
Pollution Control Device	:	F. D. Cooler and Pulse Jet Bag Filter			

B. RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017	: 26.49

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Stack Emission		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/VII		Report No.	:	ENV/25/Sep./TR(A)/VII/24-25		

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	SEAF (No.2)			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	32.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	1.80
Capacity	:	9.0 MVA	Height of sampling port (mtr.) (from G.L.)	:	22.0
Emission Due to	:	Reduction of Mn-Ore			
Fuel Used	:	N.A. (Electrically Operated)	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Nil			
Pollution Control Device	:	F. D. Cooler and Pulse Jet Bag Filter			

B. RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017 :	24.58

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

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Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.				Type of Industry	:	Steel & Power Unit			
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121				Sampling Date	:	12.09.2024			
						Period of Analysis	:	14.09.2024 – 14.09.2024			
						Date of Issue	:	16.09.2024			
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Stack Emission			
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/VIII	Report No.	:	ENV/25/Sep./TR(A)/VIII/24-25			

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	SEAF (No.3)			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	32.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	1.80
Capacity	:	9.0 MVA	Height of sampling port (mtr.) (from G.L.)	:	22.0
Emission Due to	:	Reduction of Mn-Ore			
Fuel Used	:	N.A. (Electrically Operated)	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Nil			
Pollution Control Device	:	F. D. Cooler and Pulse Jet Bag Filter			

B. RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017 :	21.45

Remarks : Result relates only to the sample tested.

Reviewed By :

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Authorised Signatory :

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Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.				Type of Industry	:	Steel & Power Unit			
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121				Sampling Date	:	12.09.2024			
						Period of Analysis	:	14.09.2024 – 14.09.2024			
						Date of Issue	:	16.09.2024			
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Stack Emission			
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/IX	Report No.	:	ENV/25/Sep./TR(A)/IX/24-25			

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	SEAF (No.4)			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	32.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	1.80
Capacity	:	9.0 MVA	Height of sampling port (mtr.) (from G.L.)	:	22.0
Emission Due to	:	Reduction of Mn-Ore			
Fuel Used	:	N.A. (Electrically Operated)	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Nil			
Pollution Control Device	:	F. D. Cooler and Pulse Jet Bag Filter			

B. RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017 :	24.62

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.			Type of Industry	:	Steel & Power Unit	
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121			Sampling Date	:	11.09.2024	
					Period of Analysis	:	14.09.2024 – 14.09.2024	
					Date of Issue	:	16.09.2024	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	: No	Type of Sample	:	Stack Emission	
Sample Condition	:	Sealed	Sample ID No.	: ENV/25/Sep./A/X	Report No.	:	ENV/25/Sep./TR(A)/X/24-25	

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	AFBC Boiler			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	60.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	2.1
Capacity	:	36 TPH	Height of sampling port (mtr.) (from G.L.)	:	20.0
Emission Due to	:	Combustion of Coal & Dolochar			
Fuel Used	:	Coal & Dolochar	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Coal – 150 TPD & Dolochar – 132TPD			
Pollution Control Device	:	E.S.P			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS
1.	Concentration of SO_2 (at 6% O_2)	mg/Nm^3	IS 11255 (Part 2) : 2019	:	89.63
2.	Concentration of NO_x (at 6% O_2)	mg/Nm^3	IS 11255 (Part 7) : 2017 / ASTM D 1608-98, Sec. 11 (Vol. 11.07) : 2017	:	61.56
3.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	10.6
4.	Concentration of O_2	% (v/v)	EPA Method 3 : 2017	:	8.2
5.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0
6.	a) Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017	:	19.75
	b) Concentration of Particulate Matter (at 6% O_2)	mg/Nm^3		:	23.14

Remarks : Result relates only to the sample tested.

Reviewed By :

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Authorised Signatory :

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Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.			Type of Industry	:	Steel & Power Unit	
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121			Sampling Date	:	12.09.2024	
					Period of Analysis	:	14.09.2024 – 14.09.2024	
					Date of Issue	:	16.09.2024	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	: No	Type of Sample	:	Stack Emission	
Sample Condition	:	Sealed	Sample ID No.	: ENV/25/Sep./A/XI	Report No.	:	ENV/25/Sep./TR(A)/XI/24-25	

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	Rotary Kiln No. 7			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	72.0
Materials of Construction	:	RCC	Stack I.D. at sampling point (mtr.)	:	2.17
Capacity	:	600 TPD	Height of sampling port (mtr.) (from G.L.)	:	35.0
Emission Due to	:	Combustion of Coal & Reduction of Fe-Ore			
Fuel Used	:	Coal	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	13.5 TPH/hr.			
Pollution Control Device	:	E.S.P			

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.		RESULTS
1.	Concentration of SO_2	mg/Nm^3	IS 11255 (Part 2) : 2019	:	510.50
2.	Concentration of CO_2	% (v/v)	IS 13270 : 2019	:	11.8
3.	Concentration of CO	%(v/v)	IS 13270 : 2019	:	<1.0
4.	a) Concentration of Particulate Matter (at 11.8% CO_2)	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11	:	32.67
	b) Concentration of Particulate Matter (at 12% CO_2)	mg/Nm^3	(Vol.11.07) : 2017	:	35.35

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya

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Authorised Signatory :

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TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.					Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121					Sampling Date	:	12.09.2024		
							Period of Analysis	:	14.09.2024 – 14.09.2024		
							Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No		Type of Sample	:	Stack Emission		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XII		Report No.	:	ENV/25/Sep./TR(A)/XII/24-25		

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	Product House of (100 TPD) DRI			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	30.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	0.8
Capacity	:	--	Height of sampling port (mtr.) (from G.L.)	:	13.0
Emission Due to	:	Process			
Fuel Used	:	Nil	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Yes			
Pollution Control Device	:	Bag Filter			

B. RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017	: 24.09

Remarks : Result relates only to the sample tested.
: During monitoring all furnaces were in operation.

Reviewed By :

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Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	:	Shakambhari Ispat & Power Ltd.				Type of Industry	:	Steel & Power Unit		
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121				Sampling Date	:	12.09.2024		
						Period of Analysis	:	14.09.2024 – 14.09.2024		
						Date of Issue	:	16.09.2024		
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Stack Emission		
Sample Condition	:	Sealed	Sample ID No.	:	ENV/25/Sep./A/XIII	Report No.	:	ENV/25/Sep./TR(A)/XIII/24-25		

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	:	Hoods Over Induction Furnace (6 nos.) attached to common stack			
Shape of Stack	:	Circular	Height of Stack (mtr.) (from G. L.)	:	30.0
Materials of Construction	:	M.S.	Stack I.D. at sampling point (mtr.)	:	1.0
Capacity	:	25 MT/Heat (each furnace)	Height of sampling port (mtr.) (from G.L.)	:	19.0
Emission Due to	:	Melting of Pig Iron, Sponge Iron and Scrap			
Fuel Used	:	Electrically Operated	Permanent Platform & Ladder	:	Yes
Working Fuel Consumption	:	Yes			
Pollution Control Device	:	Bag Filter			

B. RESULT

SL. NO.	PARAMETER	UNIT	METHOD NO.	RESULT
1.	Concentration of Particulate Matter	mg/Nm^3	IS 11255 (Part – 1) : 2019 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol.11.07) : 2017	: 23.56

Remarks : Result relates only to the sample tested.
: During monitoring all furnaces were in operation.

Reviewed By :

Indrani Bhattacharya
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Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

ANNEXURE- 9

Table – 22

FORM-30

Register containing particulars of monitoring of working environment required under section 7-A(2)(e) of the Act.

Name of the Plant : : M/s. Shakambhari Ispat & Power Ltd.,

Address : Vill- Madandih, P.O.- Bartoria, Dist: Purulia, W.B-723121.

Particulars of sampling :

Location/ Operation monitored	Identified contaminant	Date & Time of Monitoring	Airborne Contamination				TWA Concentration (as given in Second Schedule)	Sampling Instrument used	Number of workers exposed at the location being monitored		Remarks	Signature of person taking samples	Name (in block letters)
			No. of samples	Range		Average			Continuous Exposure	Short term Exposure			
Tapping Yard Furnace - 2 (Ferro Alloy)	Silica, SiO_2 (Quartz, in terms of respirable dust)	07/05/2024, 8:30 A.M.	3	Respirable Dust in mg/m^3	1.439	1.405	$\frac{10.0}{(\% \text{ Respirable Quartz} + 2)}$ mg/m3	See Annex-1	3	5	Below PEL	Bidya	S.BAIDYA
					1.401								
					1.376								
				% Respirable Quartz	1.13	1.087							
					1.09								
					1.04								

* PEL – Permissible Exposure Limit

Pollution And Project Consultants Kolkata

J. Dey

(J. DEY)
Authorized Signatory

Table – 23

FORM-30

Register containing particulars of monitoring of working environment required under section 7-A(2)(e) of the Act.

Name of the Plant : : M/s. Shakambhari Ispat & Power Ltd.,

Address : Vill- Madandih, P.O.- Sartoria, Dist: Purulia, W.B-723121.

Particulars of sampling :

Location/ Operation monitored	Identified contaminant	Date & Time of Monitoring	Airborne Contamination				TWA Concentration (as given in Second Schedule)	Sampling Instrument used	Number of workers exposed at the location being monitored		Remarks	Signature of person taking samples	Name (in block letters)
			No. of samples	Range		Average			Continuous Exposure	Short term Exposure			
Metal Breaking Yard - 1 (Ferro Alloy)	Silica, SiO_2 (Quartz, in terms of respirable dust)	07/05/2024, 4:40 P.M.	3	Respirable Dust in mg/m^3	0.694	0.649	$\frac{10.0}{(\%\ \text{Respirable Quartz} + 2)}$ mg/m3	See Annex-1	10	0	Below PEL	S.Baidya	S.BAIDYA
					0.668								
					0.586								
				% Respirable Quartz	1.59	1.473							
					1.47								
					1.36								

* PEL – Permissible Exposure Limit

Pollution And Project Consultants Kolkata

J. DEY

(J. DEY)
Authorized Signatory

Table – 24

FORM-30

Register containing particulars of monitoring of working environment required under section 7-A(2)(e) of the Act.

Name of the Plant : : M/s. Shakambhari Ispat & Power Ltd.,

Address : Vill- Madandih, P.O.- Bartoria, Dist: Purulia, W.B-723121.

Particulars of sampling :

Location/ Operation monitored	Identified contaminant	Date & Time of Monitoring	Airborne Contamination				TWA Concentration (as given in Second Schedule)	Sampling Instrument used	Number of workers exposed at the location being monitored		Remarks	Signature of person taking samples	Name (in block letters)
			No. of samples	Range		Average			Continuous Exposure	Short term Exposure			
Metal Breaking Yard - 3 (Ferro Alloy)	Silica, SiO_2 (Quartz, in terms of respirable dust)	08/05/2024, 9:25 A.M.	3	Respirable Dust in mg/m^3	0.611	0.568	$\frac{10.0}{(\%\ \text{Respirable Quartz} + 2)}$ mg/m3	See Annex-1	10	0	Below PEL	S.Baidya	S.BAIDYA
					0.563								
					0.529								
				% Respirable Quartz	1.53	1.410							
					1.41								
					1.29								

* PEL – Permissible Exposure Limit

Pollution And Project Consultants Kolkata

J. Dey

(J. DEY)
Authorized Signatory

Table – 25

FORM-30

Register containing particulars of monitoring of working environment required under section 7-A(2)(e) of the Act.

Name of the Plant : : M/s. Shakambhari Ispat & Power Ltd.,

Address : Vill- Madandih, P.O.- Bartoria, Dist: Purulia, W.B-723121.

Particulars of sampling :

Location/ Operation monitored	Identified contaminant	Date & Time of Monitoring	Airborne Contamination				TWA Concentration (as given in Second Schedule)	Sampling Instrument used	Number of workers exposed at the location being monitored		Remarks	Signature of person taking samples	Name (in block letters)
			No. of samples	Range		Average			Continuous Exposure	Short term Exposure			
Slag Crusher Area (Ferro Alloy)	Silica, SiO_2 (Quartz, in terms of respirable dust)	09/05/2024, 9:40 A.M.	3	Respirable Dust in mg/m^3	0.649	0.614	$\frac{10.0}{(\%\ \text{Respirable Quartz} + 2)}$ mg/m3	See Annex-1	2	4	Below PEL	Baidya	S.BAIDYA
					0.612								
					0.581								
				% Respirable Quartz	1.31	1.183							
					1.23								
					1.01								

* PEL – Permissible Exposure Limit

Pollution And Project Consultants Kolkata

J. Dey

(J. DEY)
Authorized Signatory

Table – 26

FORM-30

Register containing particulars of monitoring of working environment required under section 7-A(2)(e) of the Act.

Name of the Plant : : M/s. Shakambhari Ispat & Power Ltd.,

Address : Vill- Madandih, P.O.- Bartoria, Dist: Purulia, W.B-723121.

Particulars of sampling :

Location/ Operation monitored	Identified contaminant	Date & Time of Monitoring	Airborne Contamination				TWA Concentration (as given in Second Schedule)	Sampling Instrument used	Number of workers exposed at the location being monitored		Remarks	Signature of person taking samples	Name (in block letters)
			No. of samples	Range		Average			Continuous Exposure	Short term Exposure			
Control Room -1 & 2 (1st Floor) (Ferro Alloy)	Silica, SiO_2 (Quartz, In terms of respirable dust)	10/05/2024, 9:20 A.M.	3	Respirable Dust in mg/m^3	0.459	0.401	$\frac{10.0}{(\%\ Respirable\ Quartz + 2)}$ mg/m3	See Annex-1	1	2	Below PEL	Baidya	S.BAIDYA
					0.378								
					0.365								
				% Respirable Quartz	0.85	0.767							
					0.79								
					0.66								

* PEL – Permissible Exposure Limit

Pollution And Project Consultants Kolkata

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Authorized Signatory

ANNEXURE-10 A

FORMAT NO. ENV/FM/55

TEST REPORT

Name of the Industry	:	Shakambhari Ispat & Power Ltd.	Type of Industry	:	Steel & Power Unit
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121	Sampling Date	:	12.09.2024
			Period of Analysis	:	13.09.2024 – 20.09.2024
			Date of Issue	:	21.09.2024

Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Ground Water			
Location	:	Tubewell of Madandih Village	Sample Condition	:	Sealed	Sample ID No.	:	ENV/282A/Sep./W/M(i)			
Report No.	:	ENV/282A/Sep./TR(W)/M(i)/24-25									

	PARAMETERS	METHOD	UNIT	RESULTS
1.	Colour	APHA 23rd Ed., 3111 B : 2017	Hazen	1.0
2.	Odour	APHA 23rd Ed., 2150 B : 2017	--	Odourless
3.	pH	APHA 23rd Ed., 4500 – H^+B : 2017	--	6.82
4.	Taste	APHA 23rd Ed., 2160 B : 2017	--	Acceptable
5.	Turbidity	APHA 23rd Ed., 2130 B : 2047	NTU	1.80
6.	Total Dissolved Solids	APHA 23rd Ed., 2540 B : 2017	mg./l	480.0
7.	Calcium	APHA 23rd Ed., 3500 Ca-B : 2017	mg./l	32.50
8.	Chloride	APHA 23rd Ed., 4500 Cl-B/D : 2017	mg./l	72.50
9.	Iron	APHA 23rd Ed., 3111 B : 2017	mg./l	0.52
10.	Magnesium	APHA 23rd Ed., 3500 Mg-B : 2017	mg./l	8.80
11.	Nitrate	APHA 23rd Ed., NO_3-E : 2017	mg./l	2.80
12.	Sulphate	APHA 23rd Ed., 4500 SO_4-E : 2017	mg./l	76.50
13.	Total Alkalinity	APHA 23rd Ed., 2320 B : 2017	mg./l	82.5
14.	Total Hardness	APHA 23rd Ed., 2340 C : 2017	mg./l	120.0
15.	Arsenic	IS 3025 (Part 37) : 1988 : 2014	mg./l	<0.01
16.	Chromium	APHA 23rd Ed., 3111 Cr-B : 2017	mg./l	<0.02
17.	Boron	APHA 23rd Ed., 4500 B-C : 2017	mg./l	<0.1

Remarks : a) Sample collected by Envirocheck and sent to lab for testing in sealed condition.
b) Result relates only to the sample tested.

Reviewed By :
Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :
Dr. AJOY PAUL
Quality Manager

FORMAT NO. ENV/FM/55

TEST REPORT

Name of the Industry	:	Shakambhari Ispat & Power Ltd.	Type of Industry	:	Steel & Power Unit
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121	Sampling Date	:	12.09.2024
			Period of Analysis	:	13.09.2024 – 20.09.2024
			Date of Issue	:	21.09.2024

Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Ground Water			
Location	:	Tubewell of Erakusum Village	Sample Condition	:	Sealed	Sample ID No.	:	ENV/282A/Sep./W/M(ii)			
Report No.	:	ENV/282A/Sep./TR(W)/M(ii)/24-25									

	PARAMETERS	METHOD	UNIT	RESULTS
1.	Colour	APHA 23rd Ed., 3111 B : 2017	Hazen	1.0
2.	Odour	APHA 23rd Ed., 2150 B : 2017	--	Odourless
3.	pH	APHA 23rd Ed., 4500 – H^+B : 2017	--	6.80
4.	Taste	APHA 23rd Ed., 2160 B : 2017	--	Acceptable
5.	Turbidity	APHA 23rd Ed., 2130 B : 2047	NTU	1.70
6.	Total Dissolved Solids	APHA 23rd Ed., 2540 B : 2017	mg./l	460.0
7.	Calcium	APHA 23rd Ed., 3500 Ca-B : 2017	mg./l	26.50
8.	Chloride	APHA 23rd Ed., 4500 Cl-B/D : 2017	mg./l	56.0
9.	Iron	APHA 23rd Ed., 3111 B : 2017	mg./l	0.50
10.	Magnesium	APHA 23rd Ed., 3500 Mg-B : 2017	mg./l	3.80
11.	Nitrate	APHA 23rd Ed., NO_3-E : 2017	mg./l	2.60
12.	Sulphate	APHA 23rd Ed., 4500 SO_4-E : 2017	mg./l	52.80
13.	Total Alkalinity	APHA 23rd Ed., 2320 B : 2017	mg./l	76.58
14.	Total Hardness	APHA 23rd Ed., 2340 C : 2017	mg./l	86.50
15.	Arsenic	IS 3025 (Part 37) : 1988 : 2014	mg./l	<0.01
16.	Chromium	APHA 23rd Ed., 3111 Cr-B : 2017	mg./l	<0.02
17.	Boron	APHA 23rd Ed., 4500 B-C : 2017	mg./l	<0.1

Remarks : a) Sample collected by Envirocheck and sent to lab for testing in sealed condition.
b) Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

<End of Report>

ANNEXURE-10 B

FORMAT NO. ENV/FM/40

TEST REPORT

Name of the Industry	:	Shakambhari Ispat & Power Ltd.		Type of Industry	:	Steel & Power Unit	
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121		Sampling Date	:	12.09.2024	
				Period of Analysis	:	13.09.2024 – 20.09.2024	
				Date of Issue	:	21.09.2024	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	: Industrial Effluent Water (Grab)
Location	:	E.T.P Outlet	Sample Condition	:	Sealed	Sample ID No.	: ENV/282/Sep./W/M/II
Report No.	:	ENV/282/Sep./TR(W)/M/II/24-25					

SL. NO.	PARAMETERS	TEST METHOD	UNIT	RESULTS	LIMIT
1.	pH	4500 H^+B APHA 23rd Edition, 2017	-	6.86	5.5 – 9.0
2.	Total Suspended solids	2540 D APHA 23rd Edition, 2017	mg/l	40.0	100.0
3.	Oil & Grease	5520 B/D APHA 23rd Edition, 2017	mg/l	5.80	10.0
4.	Chemical Oxygen Demand	5220 B/C/D APHA 23rd Edition, 2017	mg/l	160.0	250.0
5.	Biochemical Oxygen Demand for 5 days at 20^0C	5210 B APHA 23rd Edition, 2017	mg/l	<2.0	30.0

Remarks : a) Limit as per Schedule VI inserted by Rule 2(d) of the Environment (Protection) Second Amendment Rules, 1993 notified vide G.S.R. 422(E) dated 19.05.1993, published in the Gazette No. 174 dated 19.05.1993.

b) Result relates only to the sample tested.

c) Sample collected by Envirocheck and sent lab for testing in sealed condition.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

FORMAT NO. ENV/FM/40

TEST REPORT

Name of the Industry	:	Shakambhari Ispat & Power Ltd.		Type of Industry	:	Steel & Power Unit	
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121		Sampling Date	:	12.09.2024	
				Period of Analysis	:	13.09.2024 – 20.09.2024	
				Date of Issue	:	21.09.2024	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	: Industrial Effluent Water (Grab)
Location	:	Recycling Water of D. M. Plant	Sample Condition	:	Sealed	Sample ID No.	: ENV/282/Sep./W/M/III
Report No.	:	ENV/282/Sep./TR(W)/M/III/24-25					

SL. NO.	PARAMETERS	TEST METHOD	UNIT	RESULTS	LIMIT
1.	pH	4500 H^+B APHA 23rd Edition, 2017	-	6.83	5.5 – 9.0
2.	Total Suspended solids	2540 D APHA 23rd Edition, 2017	mg/l	36.0	100.0
3.	Oil & Grease	5520 B/D APHA 23rd Edition, 2017	mg/l	<1.0	10.0
4.	Chemical Oxygen Demand	5220 B/C/D APHA 23rd Edition, 2017	mg/l	80.0	250.0
5.	Biochemical Oxygen Demand for 5 days at 20^0C	5210 B APHA 23rd Edition, 2017	mg/l	24.0	30.0

Remarks : a) Limit as per Schedule VI inserted by Rule 2(d) of the Environment (Protection) Second Amendment Rules, 1993 notified vide G.S.R. 422(E) dated 19.05.1993, published in the Gazette No. 174 dated 19.05.1993.

b) Result relates only to the sample tested.

c) Sample collected by Envirocheck and sent lab for testing in sealed condition.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

ANNEXURE-10 C

FORMAT NO. ENV/FM/40

TEST REPORT

Name of the Industry	:	Shakambhari Ispat & Power Ltd.	Type of Industry	:	Steel & Power Unit
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121	Sampling Date	:	12.09.2024
			Period of Analysis	:	13.09.2024 – 20.09.2024
			Date of Issue	:	21.09.2024

Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	:	Surface Water
Location	:	Madandih Village Pond	Sample Condition	:	Sealed	Sample ID No.	:	ENV/282/Sep./W/M/IV
Report No.	:	ENV/282/Sep./TR(W)/M/IV/24-25						

SL. NO.	PARAMETERS	TEST METHOD	UNIT	RESULTS
1.	pH	APHA 23rd Ed., 4500 H^+B : 2017	-	7.26
2.	Total Suspended Solids	APHA 23rd Ed., 2540 D : 2017	mg/l	26.0
3.	Total Dissolved Solids	IS 3025 (Part 16) : 1984 : 2014	mg/l	260.0
4.	Dissolved Oxygen	APHA 23rd Ed., 4500 – OC : 2017	mg/l	6.40
5.	COD	APHA 23rd Ed., 5220 B/C/D : 2017	mg/l	40.0
6.	BOD [5 Day's at 20°C]	APHA 23rd Ed., 5210 B : 2017	mg/l	8.0
7.	Oil & Grease	APHA 23rd Ed., 5520 B/D/ : 2017	mg/l	<1.0
8.	Residual Chlorine	APHA 23rd Ed., Cl-B : 2017	mg/l	<0.04
9.	Chloride	APHA 23rd Ed., 4500 Cl-B/D : 2017	mg/l	30.0
10.	Iron	APHA 23rd Ed., 3111 B : 2017	mg/l	0.16
11.	Arsenic	APHA 23rd Ed., 3114 B : 2017	mg/l	<0.01
12.	Lead	APHA 23rd Ed., 3111 B : 2017	mg/l	<0.005
13.	Mercury	APHA 23rd Ed., 3112 B : 2017	mg/l	<0.001
14.	Copper	APHA 23rd Ed., 3111 B : 2017	mg/l	<0.04
15.	Zinc	APHA 23rd Ed., 3111 B : 2017	mg/l	0.30
16.	Total Chromium	APHA 23rd Ed., 3111 B : 2017	mg/l	<0.02

Remarks : a) Sample collected by Envirocheck and sent to lab for testing in sealed condition.
b) Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

FORMAT NO. ENV/FM/40

TEST REPORT

Name of the Industry	:	Shakambhari Ispat & Power Ltd.		Type of Industry	:	Steel & Power Unit	
Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121		Sampling Date	:	12.09.2024	
				Period of Analysis	:	13.09.2024 – 20.09.2024	
				Date of Issue	:	21.09.2024	
Sampling Plan & Procedure	:	ENV/SOP/01	Deviation from the Sampling Method and Plan	:	No	Type of Sample	: Surface Water
Location	:	Erakusum Village Pond	Sample Condition	:	Sealed	Sample ID No.	: ENV/282/Sep./W/M/V
Report No.	:	ENV/282/Sep./TR(W)/M/V/24-25					

SL. NO.	PARAMETERS	TEST METHOD	UNIT	RESULTS
1.	pH	APHA 23rd Ed., 4500 H^+B : 2017	-	7.20
2.	Total Suspended Solids	APHA 23rd Ed., 2540 D : 2017	mg/l	25.0
3.	Total Dissolved Solids	IS 3025 (Part 16) : 1984 : 2014	mg/l	210.0
4.	Dissolved Oxygen	APHA 23rd Ed., 4500 – OC : 2017	mg/l	6.6
5.	COD	APHA 23rd Ed., 5220 B/C/D : 2017	mg/l	28.0
6.	BOD [5 Day's at 20°C]	APHA 23rd Ed., 5210 B : 2017	mg/l	10.0
7.	Oil & Grease	APHA 23rd Ed., 5520 B/D/ : 2017	mg/l	<1.0
8.	Residual Chlorine	APHA 23rd Ed., Cl-B : 2017	mg/l	<0.04
9.	Chloride	APHA 23rd Ed., 4500 Cl-B/D : 2017	mg/l	32.0
10.	Iron	APHA 23rd Ed., 3111 B : 2017	mg/l	0.10
11.	Arsenic	APHA 23rd Ed., 3114 B : 2017	mg/l	<0.01
12.	Lead	APHA 23rd Ed., 3111 B : 2017	mg/l	<0.005
13.	Mercury	APHA 23rd Ed., 3112 B : 2017	mg/l	<0.001
14.	Copper	APHA 23rd Ed., 3111 B : 2017	mg/l	<0.04
15.	Zinc	APHA 23rd Ed., 3111 B : 2017	mg/l	0.20
16.	Total Chromium	APHA 23rd Ed., 3111 B : 2017	mg/l	<0.02

Remarks : a) Sample collected by Envirocheck and sent to lab for testing in sealed condition.
b) Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

<End of Report>

ANNEXURE-11 A

NOISE MONITORING REPORT

Shakambhari Ispat & Power Limited

Vill. – Madandih, P.O – Bartoria, P.S – Neturia, District – Purulia, Pin – 723121

MONITORED BY :
ENVIROCHECK
189, Rastraguru Avenue,
Calcutta - 700 028

Report No : ENV/03/Sep/(TR)N/I/24-25

Sampling Locations :	Gopalganj Primary School	Date of Study :	11/9/2024
Category :	Steel & Power Unit	Day time :	6 AM to 10 PM

Time (hrs.)	L_{min}	L_{max}	L_{eq}	Day time L_{eq}
6:00 AM to 7:00 AM	51.8	56.4	54.32	
7:00 AM to 8:00 AM	52.6	57.0	55.62	
8:00 AM to 9:00 AM	56.9	58.3	57.49	
9:00 AM to 10:00 AM	55.1	58.6	56.86	
10:00 AM to 11:00 AM	50.3	55.8	53.78	
11:00 AM to 12:00 PM	52.5	58.4	56.15	
12:00 PM to 1:00 PM	55.9	59.1	57.79	
1:00 PM to 2:00 PM	54.2	58.6	56.93	
2:00 PM to 3:00 PM	52.9	54.3	53.66	54.47
3:00 PM to 4:00 PM	51.6	53.8	52.84	
4:00 PM to 5:00 PM	48.6	50.1	49.41	
5:00 PM to 6:00 PM	49.9	50.2	50.05	
6:00 PM to 7:00 PM	47.9	52.8	51.01	
7:00 PM to 8:00 PM	48.3	51.8	50.39	
8:00 PM to 9:00 PM	49.9	52.8	51.59	
9:00 PM to 10:00 PM	45.5	49.6	48.02	

Date of Study :	11/09/2024 to 12/09/2024	Night time :	10 PM to 6 AM

Time(hrs.)	L_{min}	L_{max}	L_{eq}	Night time L_{eq}
10:00 PM to 11:00 PM	44.1	48.6	46.91	
11:00 PM to 12:00 AM	43.7	46.1	45.06	
12:00 AM to 1:00 AM	40.2	44.6	42.98	
1:00 AM to 2:00 AM	39.4	41.8	40.56	43.66
2:00 AM to 3:00 AM	40.7	43.2	42.13	
3:00 AM to 4:00 AM	40.2	42.8	41.69	
4:00 AM to 5:00 AM	41.5	43.9	42.86	
5:00 AM to 6:00 AM	42.6	44.5	43.65	

L_{min} : Minimum Noise level L_{max} :Maximum Noise level L_{eq} :Equivalent sound energy

Compiled by : (Signature)
Dr. Ajoy Paul

Envirocheck Seal
Date : 14/09/2024

Certified by : (Signature)
Dr. S. B. Chowdhury

NOISE MONITORING REPORT

Shakambhari Ispat & Power Limited

Vill. – Madandih, P.O – Bartoria, P.S – Neturia, District – Purulia, Pin – 723121

MONITORED BY :
ENVIROCHECK
189, Rastraguru Avenue,
Calcutta - 700 028

Report No : ENV/03/Sep/(TR)N/II/24-25

Sampling Locations :	Madandih Village	Date of Study :	11/9/2024
Category :	Steel & Power Unit	Day time :	6 AM to 10 PM

Time (hrs.)	L_{min}	L_{max}	L_{eq}	Day time L_{eq}
6:00 AM to 7:00 AM	49.6	57.5	55.10	
7:00 AM to 8:00 AM	50.2	56.7	55.38	
8:00 AM to 9:00 AM	51.8	57.6	55.60	
9:00 AM to 10:00 AM	50.4	55.8	53.89	
10:00 AM to 11:00 AM	53.9	56.8	55.59	
11:00 AM to 12:00 PM	52.2	56.4	54.79	
12:00 PM to 1:00 PM	52.7	59.8	57.56	
1:00 PM to 2:00 PM	51.9	57.6	55.62	54.16
2:00 PM to 3:00 PM	52.4	54.1	53.33	
3:00 PM to 4:00 PM	50.6	53.7	52.42	
4:00 PM to 5:00 PM	50.6	56.2	54.25	
5:00 PM to 6:00 PM	50.0	55.6	53.84	
6:00 PM to 7:00 PM	48.1	51.2	49.92	
7:00 PM to 8:00 PM	47.9	53.7	51.70	
8:00 PM to 9:00 PM	46.8	49.8	48.55	
9:00 PM to 10:00 PM	45.8	50.6	48.83	

Date of Study :	11/09/2024 to 12/09/2024	Night time :	10 PM to 6 AM

Time(hrs.)	L_{min}	L_{max}	L_{eq}	Night time L_{eq}
10:00 PM to 11:00 PM	43.8	45.9	44.98	
11:00 PM to 12:00 AM	42.6	44.9	43.90	
12:00 AM to 1:00 AM	42.5	47.6	45.76	
1:00 AM to 2:00 AM	41.8	45.8	44.25	44.39
2:00 AM to 3:00 AM	40.7	43.2	42.13	
3:00 AM to 4:00 AM	41.5	44.7	43.39	
4:00 AM to 5:00 AM	42.6	45.9	44.56	
5:00 AM to 6:00 AM	43.7	46.2	45.13	

L_{min} : Minimum Noise level L_{max} :Maximum Noise level L_{eq} :Equivalent sound energy

Compiled by : (Signature)
Dr. Ajoy Paul

Envirocheck Seal
Date : 14/09/2024

Certified by : (Signature)
Dr. S. B. Chowdhury

NOISE MONITORING REPORT

Shakambhari Ispat & Power Limited

Vill. – Madandih, P.O – Bartoria, P.S – Neturia, District – Purulia, Pin – 723121

MONITORED BY :
ENVIROCHECK
189, Rastraguru Avenue,
Calcutta - 700 028

Report No : ENV/03/Sep/(TR)N/III/24-25

Sampling Locations :	Near Harmadih Rural Hospital	Date of Study :	11/9/2024
Category :	Steel & Power Unit	Day time :	6 AM to 10 PM

Time (hrs.)	L_{min}	L_{max}	L_{eq}	Day time L_{eq}
6:00 AM to 7:00 AM	52.5	58.6	56.54	
7:00 AM to 8:00 AM	53.1	57.8	56.06	
8:00 AM to 9:00 AM	57.4	59.2	58.28	
9:00 AM to 10:00 AM	55.1	58.6	56.86	
10:00 AM to 11:00 AM	50.3	55.8	53.78	
11:00 AM to 12:00 PM	52.5	58.4	56.15	
12:00 PM to 1:00 PM	55.9	59.1	57.79	
1:00 PM to 2:00 PM	54.2	58.6	56.93	54.78
2:00 PM to 3:00 PM	52.9	54.3	53.66	
3:00 PM to 4:00 PM	51.6	53.8	52.84	
4:00 PM to 5:00 PM	48.6	50.1	49.41	
5:00 PM to 6:00 PM	49.9	50.2	50.05	
6:00 PM to 7:00 PM	47.9	52.8	51.01	
7:00 PM to 8:00 PM	48.3	51.8	50.39	
8:00 PM to 9:00 PM	49.9	52.8	51.59	
9:00 PM to 10:00 PM	45.5	49.6	48.02	

Date of Study :	11/09/2024 to 12/09/2024	Night time :	10 PM to 6 AM

Time(hrs.)	L_{min}	L_{max}	L_{eq}	Night time L_{eq}
10:00 PM to 11:00 PM	44.2	47.1	45.89	
11:00 PM to 12:00 AM	38.2	43.5	41.61	
12:00 AM to 1:00 AM	39.3	41.6	40.60	
1:00 AM to 2:00 AM	37.6	40.6	39.35	43.72
2:00 AM to 3:00 AM	43.6	48.1	46.41	
3:00 AM to 4:00 AM	41.8	45.9	44.32	
4:00 AM to 5:00 AM	41.0	44.2	42.89	
5:00 AM to 6:00 AM	42.5	45.0	43.93	

L_{min} : Minimum Noise level L_{max} :Maximum Noise level L_{eq} :Equivalent sound energy

Compiled by : (Signature)
Dr. Ajoy Paul

Envirocheck Seal
Date : 14/09/2024

Certified by : (Signature)
Dr. S. B. Chowdhury

ENVIROCHECK
Recognised by MoEF&CC, WBPCB & JSPCB
Accredited by NABL (ISO/IEC 17025:2017)
Certified by ISO 9001:2015, ISO 14001:2015 & ISO 45001 : 2018

NOISE MONITORING REPORT

Shakambhari Ispat & Power Limited

Vill. – Madandih, P.O – Bartoria, P.S – Neturia, District – Purulia, Pin – 723121

MONITORED BY :
ENVIROCHECK
189, Rastraguru Avenue,
Calcutta - 700 028

Report No : ENV/03/Sep/(TR)N/IV/24-25

Sampling Locations :	East direction form the Plant Boundary (Ferro Division)	Date of Study :	11/9/2024
Category :	Steel & Power Unit	Day time :	6 AM to 10 PM

Time (hrs.)	L_{min}	L_{max}	L_{eq}	Day time L_{eq}
6:00 AM to 7:00 AM	55.3	59.4	57.82	
7:00 AM to 8:00 AM	56.2	60.4	58.79	
8:00 AM to 9:00 AM	58.9	61.5	60.39	
9:00 AM to 10:00 AM	60.2	62.7	61.63	
10:00 AM to 11:00 AM	61.5	64.9	63.52	
11:00 AM to 12:00 PM	50.1	62.8	53.89	
12:00 PM to 1:00 PM	60.3	64.3	62.35	
1:00 PM to 2:00 PM	61.8	64.7	63.45	
2:00 PM to 3:00 PM	60.7	62.3	61.48	62.50
3:00 PM to 4:00 PM	61.8	62.9	62.56	
4:00 PM to 5:00 PM	60.7	67.7	65.90	
5:00 PM to 6:00 PM	62.8	66.2	64.15	
6:00 PM to 7:00 PM	63.8	67.3	65.10	
7:00 PM to 8:00 PM	62.3	67.1	63.90	
8:00 PM to 9:00 PM	59.9	63.8	62.27	
9:00 PM to 10:00 PM	58.2	61.4	60.09	

Date of Study :	11/09/2024 to 12/09/2024	Night time :	10 PM to 6 AM

Time(hrs.)	L_{min}	L_{max}	L_{eq}	Night time L_{eq}
10:00 PM to 11:00 PM	53.2	57.5	55.86	
11:00 PM to 12:00 AM	52.9	56.4	54.99	
12:00 AM to 1:00 AM	53.4	55.9	54.83	
1:00 AM to 2:00 AM	45.5	49.6	48.02	53.22
2:00 AM to 3:00 AM	43.4	46.2	45.02	
3:00 AM to 4:00 AM	44.6	47.4	46.22	
4:00 AM to 5:00 AM	45.9	49.2	47.86	
5:00 AM to 6:00 AM	53.9	58.5	56.78	

L_{min} : Minimum Noise level

L_{eq} :Equivalent sound energy

Compiled by : (Signature)
Dr. Ajoy Paul

Envirocheck Seal
Date : 14/09/2024

Certified by : (Signature)
Dr. S. B. Chowdhury

H.O. : 63/B, Rastraguru Avenue, Kolkata - 700028 Phone [033-25792891/25497490
Laboratory : 51, 185, 186, 189,190, 192 & 326/3 Rastraguru Avenue, Kolkata - 700028
Email : envirocheck99@gmail.com / info@envirocheck.in/ / Website : www.envirocheck.in

ANNEXURE-11 B

FORMAT NO. : ENV/FM/53

TEST REPORT

1.	Name of the Industry / Project	:	Shakambhari Ispat & Power Limited.
2.	Address	:	Vill. – Madandih, P.O – Bartoria, P.S – Nuturia, District – Purulia, Pin – 723121
3.	Type of Industry	:	Steel & Power Unit
4.	Sampling Plan & Procedure	:	ENV/SOP/02
5.	Deviation from the Sampling Method & Plan	:	No
6.	Type of Sample	:	Work Zone Noise
7.	Sample ID	:	ENV/03/Mar/(TR)N/I/24-25
8.	Date of Study	:	12/09/2024
9.	Reporting Date	:	14/09/2024
10.	Method No.	:	IS 15575 (Part 2), 2022
11.	Time of Duration of Noise	:	20 Minutes
12.	Height from Ground Level	:	4 feet
13.	Sample Monitoring by		Mr. Anup Singha

RESULT OF NOISE LEVEL STUDY — **Time :10:00 – 10:20A.M**

DAY TIME

1. Location : Near 16 MW Control Room

Sl. No.	Unit	Minimum dB(A)	Maximum dB(A)	Leq dB(A)	Remarks
01.	dB(A)	71.9	77.4	75.47	East Side
02.	dB(A)	74.3	80.9	78.75	West Side
03.	dB(A)	75.6	81.9	79.80	North Side
04.	dB(A)	75.1	82.1	79.88	South Side
			Average dB(A) Leq	78.47	

Reviewed By:

Dy. Quality Manager

Authorized Signatory:

Quality Manager

>End of Report<

FORMAT NO. : ENV/FM/53

TEST REPORT

1.	Name of the Industry / Project	:	Shakambhari Ispat & Power Limited.
2.	Address	:	Vill. – Madandih, P.O – Bartoria, P.S – Nuturia, District – Purulia, Pin – 723121
3.	Type of Industry	:	Steel & Power Unit
4.	Sampling Plan & Procedure	:	ENV/SOP/02
5.	Deviation from the Sampling Method & Plan	:	No
6.	Type of Sample	:	Work Zone Noise
7.	Sample ID	:	ENV/03/Mar/(TR)N/II/24-25
8.	Date of Study	:	12/09/2024
9.	Reporting Date	:	14/09/2024
10.	Method No.	:	IS 15575 (Part 2), 2022
11.	Time of Duration of Noise	:	20 Minutes
12.	Height from Ground Level	:	4 feet
13.	Sample Monitoring by		Mr. Anup Singha

RESULT OF NOISE LEVEL STUDY — **Time :10:30 – 10:50A.M**

DAY TIME

2. Location : Near DRI 100 TPD Control Room

Sl. No.	Unit	Minimum dB(A)	Maximum dB(A)	Leq dB(A)	Remarks
01.	dB(A)	71.9	79.1	76.85	East Side
02.	dB(A)	71.4	76.2	74.43	West Side
03.	dB(A)	72.2	77.4	75.54	North Side
04.	dB(A)	73.6	80.4	78.21	South Side
			Average dB(A) Leq	76.25	

Reviewed By:

Dy. Quality Manager

Authorized Signatory:

Quality Manager

>End of Report<

FORMAT NO. : ENV/FM/53

TEST REPORT

1.	Name of the Industry / Project	:	Shakambhari Ispat & Power Limited.
2.	Address	:	Vill. – Madandih, P.O – Bartoria, P.S – Nuturia, District – Purulia, Pin – 723121
3.	Type of Industry	:	Steel & Power Unit
4.	Sampling Plan & Procedure	:	ENV/SOP/02
5.	Deviation from the Sampling Method & Plan	:	No
6.	Type of Sample	:	Work Zone Noise
7.	Sample ID	:	ENV/03/Mar/(TR)N/III/24-25
8.	Date of Study	:	12/09/2024
9.	Reporting Date	:	14/09/2024
10.	Method No.	:	IS 15575 (Part 2), 2022
11.	Time of Duration of Noise	:	20 Minutes
12.	Height from Ground Level	:	4 feet
13.	Sample Monitoring by		Mr. Anup Singha

RESULT OF NOISE LEVEL STUDY — **Time :11:00 – 11:20A.M**

DAY TIME

3. Location : Near DRI 350 TPD Control Room

Sl. No.	Unit	Minimum dB(A)	Maximum dB(A)	Leq dB(A)	Remarks
01.	dB(A)	74.9	78.6	77.13	East Side
02.	dB(A)	70.8	76.1	74.21	West Side
03.	dB(A)	71.9	77.5	75.55	North Side
04.	dB(A)	76.5	81.2	79.46	South Side
			Average dB(A) Leq	76.58	

Reviewed By:

Dy. Quality Manager

Authorized Signatory:

Quality Manager

>End of Report<

FORMAT NO. : ENV/FM/53

TEST REPORT

1.	Name of the Industry / Project	:	Shakambhari Ispat & Power Limited.
2.	Address	:	Vill. – Madandih, P.O – Bartoria, P.S – Nuturia, District – Purulia, Pin – 723121
3.	Type of Industry	:	Steel & Power Unit
4.	Sampling Plan & Procedure	:	ENV/SOP/02
5.	Deviation from the Sampling Method & Plan	:	No
6.	Type of Sample	:	Work Zone Noise
7.	Sample ID	:	ENV/03/Mar/(TR)N/IV/24-25
8.	Date of Study	:	12/09/2024
9.	Reporting Date	:	14/09/2024
10.	Method No.	:	IS 15575 (Part 2), 2022
11.	Time of Duration of Noise	:	20 Minutes
12.	Height from Ground Level	:	4 feet
13.	Sample Monitoring by		Mr. Anup Singha

RESULT OF NOISE LEVEL STUDY — **Time :11:30 – 11:50A.M**

DAY TIME

4. Location : Near DRI 600 TPD MCC Room

Sl. No.	Unit	Minimum dB(A)	Maximum dB(A)	Leq dB(A)	Remarks
01.	dB(A)	75.2	80.4	78.54	East Side
02.	dB(A)	73.1	77.5	75.83	West Side
03.	dB(A)	74.9	80.4	78.47	North Side
04.	dB(A)	75.8	77.3	76.61	South Side
			Average dB(A) Leq	77.36	

Reviewed By:

Dy. Quality Manager

Authorized Signatory:

Quality Manager

>End of Report<

FORMAT NO. : ENV/FM/53

TEST REPORT

1.	Name of the Industry / Project	:	Shakambhari Ispat & Power Limited.
2.	Address	:	Vill. – Madandih, P.O – Bartoria, P.S – Nuturia, District – Purulia, Pin – 723121
3.	Type of Industry	:	Steel & Power Unit
4.	Sampling Plan & Procedure	:	ENV/SOP/02
5.	Deviation from the Sampling Method & Plan	:	No
6.	Type of Sample	:	Work Zone Noise
7.	Sample ID	:	ENV/03/Mar/(TR)N/V/24-25
8.	Date of Study	:	12/09/2024
9.	Reporting Date	:	14/09/2024
10.	Method No.	:	IS 15575 (Part 2), 2022
11.	Time of Duration of Noise	:	20 Minutes
12.	Height from Ground Level	:	4 feet
13.	Sample Monitoring by		Mr. Anup Singha

RESULT OF NOISE LEVEL STUDY — **Time :12:00 – 12:20 P.M**

DAY TIME

5. Location : Rolling Mill Dispatch Area

Sl. No.	Unit	Minimum dB(A)	Maximum dB(A)	Leq dB(A)	Remarks
01.	dB(A)	69.4	73.9	72.21	East Side
02.	dB(A)	70.9	75.6	73.86	West Side
03.	dB(A)	71.9	74.9	73.46	North Side
04.	dB(A)	75.2	81.4	79.32	South Side
			Average dB(A) Leq	74.71	

Reviewed By:

Dy. Quality Manager

Authorized Signatory:

Quality Manager

>End of Report<

FORMAT NO. : ENV/FM/53

TEST REPORT

1.	Name of the Industry / Project	:	Shakambhari Ispat & Power Limited.
2.	Address	:	Vill. – Madandih, P.O – Bartoria, P.S – Nuturia, District – Purulia, Pin – 723121
3.	Type of Industry	:	Steel & Power Unit
4.	Sampling Plan & Procedure	:	ENV/SOP/02
5.	Deviation from the Sampling Method & Plan	:	No
6.	Type of Sample	:	Work Zone Noise
7.	Sample ID	:	ENV/03/Mar/(TR)N/VI/24-25
8.	Date of Study	:	12/09/2024
9.	Reporting Date	:	14/09/2024
10.	Method No.	:	IS 15575 (Part 2), 2022
11.	Time of Duration of Noise	:	20 Minutes
12.	Height from Ground Level	:	4 feet
13.	Sample Monitoring by		Mr. Anup Singha

RESULT OF NOISE LEVEL STUDY — **Time :12:30 – 12:50 P.M**

DAY TIME

6. Location : Near SMS Control Room

Sl. No.	Unit	Minimum dB(A)	Maximum dB(A)	Leq dB(A)	Remarks
01.	dB(A)	68.2	70.8	69.69	East Side
02.	dB(A)	70.3	73.1	71.92	West Side
03.	dB(A)	71.2	72.0	71.62	North Side
04.	dB(A)	70.0	72.6	71.49	South Side
			Average dB(A) Leq	71.18	

Reviewed By:

Dy. Quality Manager

Authorized Signatory:

Quality Manager

>End of Report<

FORMAT NO. : ENV/FM/53

TEST REPORT

1.	Name of the Industry / Project	:	Shakambhari Ispat & Power Limited.
2.	Address	:	Vill. – Madandih, P.O – Bartoria, P.S – Nuturia, District – Purulia, Pin – 723121
3.	Type of Industry	:	Steel & Power Unit
4.	Sampling Plan & Procedure	:	ENV/SOP/02
5.	Deviation from the Sampling Method & Plan	:	No
6.	Type of Sample	:	Work Zone Noise
7.	Sample ID	:	ENV/03/Mar/(TR)N/VII/24-25
8.	Date of Study	:	12/09/2024
9.	Reporting Date	:	14/09/2024
10.	Method No.	:	IS 15575 (Part 2), 2022
11.	Time of Duration of Noise	:	20 Minutes
12.	Height from Ground Level	:	4 feet
13.	Sample Monitoring by		Mr. Anup Singha

RESULT OF NOISE LEVEL STUDY — **Time :1:00 – 1:20 P.M**

DAY TIME

7. Location : Near Ferro Alloy SEAF Control Room

Sl. No.	Unit	Minimum dB(A)	Maximum dB(A)	Leq dB(A)	Remarks
01.	dB(A)	79.3	80.7	80.06	East Side
02.	dB(A)	76.2	82.9	80.73	West Side
03.	dB(A)	77.9	80.7	79.52	North Side
04.	dB(A)	80.8	83.6	82.42	South Side
			Average dB(A) Leq	80.68	

Reviewed By:

Dy. Quality Manager

Authorized Signatory:

Quality Manager

>End of Report<

ANNEXURE-12

REPORTS ON

HEAT STRESS MEASUREMENT

for

M/s. Shakambhari Ispat & Power Ltd.,

Vill- Madandih, P.O.- Bartoria, Dist: Purulia, W.B-723121

MAY, 2024

PREPARED BY:

M/s. Pollution And Project Consultants,
P – 145, Bangur Avenue, Block – A,
Kolkata – 700 055
Mob: 9830947639

Name of the Factory	:	M/s. Shakambhari Ispat & Power Ltd., Vill- Madandih, P.O.- Bartoria, Dist: Purulia, W.B-723121
Date of Execution of job	:	7th to 10th May, 2024

1.0 INTRODUCTION:

M/s. Pollution And Project Consultants have been asked to carry out the measurement of Heat Stress. Accordingly, the Heat Stress measurements have been conducted with the use of Dry Bulb Wet Bulb Thermometer and Heat Stress Globe attached with Glass Thermometer.

The entire fieldwork was completed within the period of 7th to 10th May'2024 and the results of monitoring have been reported.

2.0 ACKNOWLEDGEMENT:

We acknowledge our sincere thanks and gratitude to the following persons for their co-operation and help to our sampling team during the survey work:

i) Management and employees of M/s. Shakambhari Ispat & Power Ltd., Vill- Madandih, P.O.- Bartoria, Dist: Purulia, W.B-723121.

Pollution And Project Consultants Kolkata

J. Dey

(J. Dey)
Authorized Signatory

:: TABLE - 1 ::

TEST REPORT
ON
HEAT STRESS MEASUREMENT

Name of the Plant : M/s. Shakambhari Ispat & Power Ltd.,

Address : Vill- Madandih, P.O.- Bartoria, Dist: Purulia, W.B-723121

SECTION : CPP 16 MW And CPP 40 & 31 MW

Sl. No. No.	Location	Date & Time of Monitoring	T_{db}(°C)	T_{nwb}(°C)	T_g(°C)	WBGT(°C)	CAF	$WBGT_{eff}$(°C)	Metabolic Rate (Watt)	TLV(°C)	Remarks
1	Turbine Floor (CPP 16 MW)	09/05/2024 at 5:20 P.M.	33.0	25.0	34.0	27.70	0	27.70	180	31	$WBGT_{eff}$ is below the TLV
2	Bed Drain Area (CPP 16 MW)	07/05/2024 at 4:00 P.M.	33.5	26.5	37.0	29.30	0	29.30	180	31	$WBGT_{eff}$ is below the TLV
3	Turbine Floor (CPP 40 MW & 31 MW)	09/05/2024 at 4:45 P.M.	34.0	26.0	35.0	28.70	0	28.70	180	31	$WBGT_{eff}$ is below the TLV
4	CFBC Bed Drain Area (CPP 40 MW & 31 MW)	08/05/2024 at 5:45 P.M.	35.0	26.5	38.5	29.75	0	29.75	180	31	$WBGT_{eff}$ is below the TLV

SECTION : SMS

Sl. No. No.	Location	Date & Time of Monitoring	T_{db}(°C)	T_{nwb}(°C)	T_g(°C)	WBGT(°C)	CAF	$WBGT_{eff}$(°C)	Metabolic Rate (Watt)	TLV(°C)	Remarks
1	SMS-1 (Furnace Floor 1-4) Area	07/05/2024 at 12:05 P.M.	35.0	27.5	38.0	30.65	0	30.65	180	31	$WBGT_{eff}$ is below the TLV
2	SMS-1 (Furnace Floor 5-9) Area	07/05/2024 at 12:45 P.M.	36.0	27.0	38.5	30.45	0	30.45	180	31	$WBGT_{eff}$ is below the TLV
3	CCM-1 Area	08/05/2024 at 11:05 A.M.	36.0	27.5	38.5	30.80	0	30.80	180	31	$WBGT_{eff}$ is below the TLV
4	CCM-2 Area	09/05/2024 at 6:25 P.M.	35.5	28.0	37.5	30.85	0	30.85	180	31	$WBGT_{eff}$ is below the TLV
5	CCM-3 Area	08/05/2024 at 5:15 P.M.	35.0	28.0	37.0	30.70	0	30.70	180	31	$WBGT_{eff}$ is below the TLV

NOTE:
1) Tdb: the dry-bulb temperature
2) T_{nwb}: the natural wet-bulb temperature
3) T_g= the globe temperature
4) WBGT: Wet Bulb Globe Temperature
5) CAF: Clothing Adjustment Factors
6) $WBGT_{eff}$: WBGT Effective
7) TLV: Threshold Limit Value

Ref: 1) OSHA Technical Manual Section III: Chapter 4 - Heat Stress

Pollution And Project Consultants Kolkata

J. Dey

(J. DEY)
Authorized Signatory

:: TABLE - 2 ::

TEST REPORT
ON
HEAT STRESS MEASUREMENT

Name of the Plant : M/s. Shakambhari Ispat & Power Ltd.,

Address : Vill- Madandih, P.O.- Bartoria, Dist: Purulia, W.B-723121

SECTION : DRI

Sl. No. No.	Location	Date & Time of Monitoring	T_{db}(°C)	T_{nwb}(°C)	T_g(°C)	WBGT(°C)	CAF	$WBGT_{eff}$(°C)	Metabolic Rate (Watt)	TLV(°C)	Remarks
1	DRI 100 TPD Kiln-4 Platform	07/05/2024 at 5:05 P.M.	37.0	27.0	41.5	30.90	0	30.90	180	31	$WBGT_{eff}$ is below the TLV
2	DRI 350 TPD Kiln-2 Platform (3rd Tier Area)	09/05/2024 at 10:45 A.M.	37.5	27.0	41.0	30.85	0	30.85	180	31	$WBGT_{eff}$ is below the TLV
3	DRI 600 TPD Kiln-2 Platform (3rd Tier Area)	09/05/2024 at 11:30 A.M.	35.5	27.5	39.5	30.80	0	30.80	180	31	$WBGT_{eff}$ is below the TLV

SECTION : ROLLING MILL

Sl. No. No.	Location	Date & Time of Monitoring	T_{db}(°C)	T_{nwb}(°C)	T_g(°C)	WBGT(°C)	CAF	$WBGT_{eff}$(°C)	Metabolic Rate (Watt)	TLV(°C)	Remarks
1	Repeater Control Pulpit Area	08/05/2024 at 12:20 P.M.	36.0	27.5	38.0	30.65	0	30.65	180	31	$WBGT_{eff}$ is below the TLV
2	In Between Old Mill Cooling Bed and Old Mill Roughing Induction Heater Area	08/05/2024 at 1:35 P.M.	37.0	27.5	38.5	30.80	0	30.80	180	31	$WBGT_{eff}$ is below the TLV
3	WRM Laying Head Area	08/05/2024 at 12:50 P.M.	37.0	27.0	39.5	30.75	0	30.75	180	31	$WBGT_{eff}$ is below the TLV
4	New Mill Roughing Stand Area	08/05/2024 at 4:25 P.M.	36.0	27.0	39.0	30.60	0	30.60	180	31	$WBGT_{eff}$ is below the TLV

SECTION : FERRO ALLOY

Sl. No. No.	Location	Date & Time of Monitoring	T_{db}(°C)	T_{nwb}(°C)	T_g(°C)	WBGT(°C)	CAF	$WBGT_{eff}$(°C)	Metabolic Rate (Watt)	TLV(°C)	Remarks
1	Tapping Yard (Furnace-1)	10/05/2024 at 11:50 A.M.	37.0	27.5	38.0	30.65	0	30.65	180	31	$WBGT_{eff}$ is below the TLV
2	Tapping Yard (Furnace-4)	10/05/2024 at 12:20 P.M.	36.5	27.0	37.5	30.15	0	30.15	180	31	$WBGT_{eff}$ is below the TLV
3	Furnace Building 1st Floor (Forklift Operating Area)	10/05/2024 at 1:00 P.M.	35.5	27.0	37.0	30.00	0	30.00	180	31	$WBGT_{eff}$ is below the TLV

NOTE: 1) Tdb: the dry-bulb temperature
2) T_{nwb}: the natural wet-bulb temperature
3) T_g: the globe temperature
4) WBGT: Wet Bulb Globe Temperature
5) CAF: Clothing Adjustment Factors
6) $WBGT_{eff}$: WBGT Effective
7) TLV: Threshold Limit Value

Ref: 1) OSHA Technical Manual Section III: Chapter 4 - Heat Stress

Pollution And Project Consultants Kolkata

J. Dey

(J. DEY)
Authorized Signatory

ANNEXURE-13

ECL

EASTERN COALFIELDS LIMITED
(A Subsidiary of Coal India Ltd.)
Office of the General Manager, Sodepur Area
P.O. – Sunderchak, P.S - Kulti,
Dt. Paschim Bardhhaman (W.B), Pin-713 360
Website – www.easterncoal.gov.in

Dated: - 24.02.2022

To
The Authority of Sakhambhari Ispat & Power Limited
Vill: Madandih
P.O: Bartoria
Dist: Purulia
Pin: 723121

Dear Sir,

In response to your letter dated: 18.02.2022, as per discussion with you, you are hereby requested to fill up an illegally Mined place at Bicched Bandh area near Narsamuda Colliery of Sodepur Area, ECL with fly ash, with active help of State Administration.

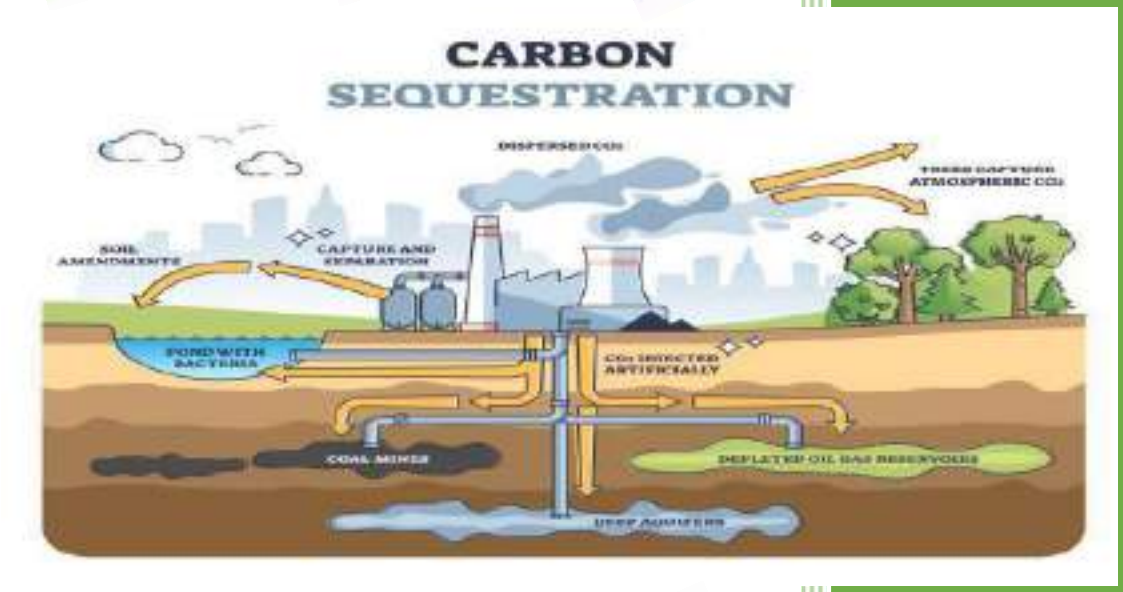
Yours faithfully

24/02/2022

Area Personnel Manager
Sodepur Area

ANNEXURE-14

CARBON FOOTPRINT & CARBON SEQUESTRATION STUDY REPORT



By

SHAKAMBHARI ISPAT & POWER LIMITED

For

Expansion of existing steel plant for Production of 0.7845 million tons per annum Crude Steel/Stainless Steel, 0.21427 2 million tons per annum Ferro-Alloys (Maximum) along with Allied Facilities

At

Village: Parvatpur, Radhamadhabpur, Madandih, P.O.: Bartoria, District: Purulia, West Bengal

INTRODUCTION

In 2015, the global response to the threat of climate change took a step forward when 190 nations adopted the Paris Agreement. In 2019, the United Nations announced that over 60 countries including the United Kingdom and the European Union (with the exception of Poland) had committed to carbon neutrality by 2050. Moreover, some nations have pledged to work toward earlier dates. Together, these agreements have led to growing pressure to pursue decarbonization across all industrial sectors.

India's Nationally Determined Contribution (NDC's) primarily targets by 2030 a reduction in the emissions intensity of Gross Domestic Product (GDP) by 33 to 35 percent; achieving about 40 percent installed power capacity from non-fossil fuel-based energy resources; energy efficiency; and creating an additional carbon sink of 2.5-3 billion tonnes of carbon dioxide equivalent through additional forest and tree cover.

Steel is one of the core pillars of today's society and, as one of the most important engineering and construction materials, it is present in many aspects of our lives. However, the industry now needs to cope with pressure to reduce its carbon footprint from both environmental and economic perspectives. Currently the steel industry is among the three biggest producers of carbon dioxide, with emissions being produced by a limited number of locations; steel plants are therefore a good candidate for decarbonization. While the industry must adapt to these new circumstances, it can also use them as a chance to safeguard its license to continue operating in the long term.

The direct CO_2 intensity of crude steel production has been relatively constant in the past few years. In contrast, in the Net Zero Emissions by 2050 Scenario it falls an average 4% annually between 2020 and 2030. Achieving this reduction and maintaining it after 2030 will not be easy. Potential for energy efficiency improvements will likely soon be exhausted. Thus, innovation in the upcoming decade will be crucial to commercialise new low-emissions processes, including those that integrate CCUS and hydrogen, to realise the long-term transformational change required. Governments can help by providing RD&D funding, creating a market for near-zero-emissions steel, adopting policies for mandatory CO_2 emissions reductions, expanding international co-operation and developing supporting infrastructure.

In this report, the carbon footprints from different factors of Shakambhari Ispat & Power Limited (SIPL) will be determined and the carbon sequestration data from the units will be accessed to have an insight on annual carbon emissions from the works. This report also provides measures to further reduce the carbon emissions from the unit through implementation of new cleaner technological advances and sustainable environment methods.

Shakambhari Ispat & Power Limited has relied on following reference for arriving CO_2 Emission Factors for steel industry

- Report on Greenhouse Gas Emissions from Major Industrial Sources –III Iron and Steel Production by International Energy Agency and USEPA; Technical Support Document for the Ferroalloy Production Sector: Proposed Rule for Mandatory Reporting of Greenhouse Gases;), the CO_2 emissions are calculated and carbon footprints are tracked in the unit.

- 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 3, Industrial Processes and Product Use

CARBON FOOTPRINT

Carbon Footprint (CF) is used to measure the impact of human activities on natural ecosystems, the relative size of human consumption on ecosystems, and it emphasizes on the effect of carbon emission of human energy activities on atmospheric environment. Based on different industries, different levels have been formulated and different greenhouse gases have been considered. Six kinds of greenhouse gas emissions such as CO_2, CH_4 and N_2O produced by human activities in the country have been estimated. The carbon footprint is characterized in three levels:

- The first level comes from the direct carbon emissions of the institution itself
- The second level expands the boundary to the direct carbon emissions of the Department that provides the energy sector
- The third level includes the direct and indirect carbon emissions of the whole life cycle of the supply chain.

CARBON FOOTPRINT IN THE IRON & STEEL INDUSTRY:

- The steel industry is one of the basic industries of the country and plays a vital role in strengthening the economy. It is one of the fastest-growing sectors as steel is one of the core pillars of modern society and is present in many aspects of our lives as it is one of the most important engineering and construction materials for its application across all industries such as the automobiles industry, real estate industry, transportation, aircraft industry, shipbuilding industry, etc.
- The steel industry is among the three biggest producers of carbon emissions. However, with the need of the hour and responsibility towards an encouraging future, the industry needs to cope with the pressure to reduce its carbon footprint from both environmental and economic perspectives.
- The direct CO_2 intensity of crude steel production has been relatively constant in the past few years. In contrast, in the Net Zero Emissions by 2050 Scenario it falls an average of 4% annually between 2020 and 2030. Achieving this reduction and maintaining it after 2030 will not be easy. The potential for energy efficiency improvements will likely soon be exhausted with the existing technology. Thus, innovation in the upcoming decade will be crucial to commercializing new lowemissions processes, including those that integrate CCUS and hydrogen, to realize the long-term transformational change required. Governments can help by providing R&D funding, creating a market for near-zero-emissions steel, adopting policies for mandatory CO_2 emissions reductions, expanding international cooperation and developing supporting infrastructure.
- While the industry must adapt to these new circumstances, it can also use them as a chance to safeguard its license to continue operating in the long term.
- In this report, the carbon footprints through various factors of Shakambhari Ispat & Power Limited (SIPL) have been discussed and the carbon sequestration data from the units provide an insight into annual greenhouse gas emissions from the works are tabulated. The measures to further reduce the carbon emissions from the unit through the implementation of new cleaner technological advances and sustainable environment methods have also been discussed.

M/s Shakambhari Ispat & Power Limited (SIPL) is an existing steel plant at village: Parvatpur, Radhamadhabpur, Madandih, P.O.: Bortoria, Tehsil: Raghunathpur, District: Purulia, West Bengal for production of MS Rolled products and Ferro-alloys. The company has proposed for expansion of existing steel plant for Production of 0.7845 million tons per annum Crude Steel/ Stainless Steel, 0.214271 million tons per annum Ferro-Alloys (Maximum) along with Allied Facilities

FACILITIES UNDER OPERATION

SPONGE IRON DIVISION: DRI Kiln 4x100TPD+2x350TPD+2x600TPD

SMS DIVISION: 9X25T Induction Furnace and 1x30TLRF

ROLLING MILL: 2X1000TPD

FERRO ALLOYS DIVISION: 6X9MVA SAF

CPP DIVISION: AFBC Boiler (36TPH), CFBC Boiler (100TPH) Total Power Generation:33.5MW

WHRB: 4x10TPH+2x35.5TPH+2x64TPH Total power Generation:54MW

Overall Carbon footprint finding after completion of expansion projects

✞ Sponge Iron Division (DRI Plant)

Following table shows the CO2 emissions from the induction furnace operation after proposed expansion.

Table 1: CO2 e Emission from DRI Division

Unit	Production (TPA)	Emission Factor (ton CO2/Ton of steel)	CO2e Emissions of the plant (TPA)
DRI DRIVISION	543113	0.7	380179.1

Total CO2 e Emission from Sponge Iron Division-**3,80,179.1 TPA**

* **Emission Factor based on 2006 IPCC Guidelines for National Greenhouse Gas Inventories**

✞ SMS Division Induction Furnace

Following table shows the CO_2 emissions from the induction furnace operation after proposed expansion.

Table 2: CO2 e Emission from SMS Division

Unit	Required Raw Materials	Quantity (TPA)	Carbon Content (W/W)	Total Carbon Taken to IF (TPA)	Carbon Retained in MS Billet (TPA)	Carbon Burnt (TPA)	CO2e Emissions after proposed expansion of the plant (TPA)
SMS	Pig Iron	65,665.29	0.040	2626.61	1219.66	8717.71	**31,993.99**
	Sponge Iron	3,55,699.45	0.020	7113.99			
	Ferro Alloys	9,838.24	0.020	196.76			
	Scrap	51,316.76	0.040	2052.67			
	BILLET	**406552**					

Total CO_2 emissions from SMS Division - **31,993.99 TPA**

✞ Ferro Division

Following table shows the CO_2 emissions from the sub-merged electric arc furnace operation at existing operation.

Table 3: CO2 e Emission from SEAF

Unit	Product	Quantity (TPA)	Emission Factor (T/T)	CO2e Emission (TPA)
FERRO DIVISION	Fe-Mn	23,876	1.3	31038.88
	Si-Mn	31,496	1.4	44094.05
	Total	**55,372**	**Total**	**75132.93**

Total CO2 e Emission from ferro alloys division - 75132.93TPA

✞ Captive Power plant

Table 4: CO2 e Emission from Captive Power Plant

Plant	Required Fuel	Quantity TPA	Carbon Content (W/W)	Combustion Rate	CO2e Emissions after proposed expansion of the plant (T/Year)
CPP	Coal	77041.71	0.67	95%	1,79,968.97
	Dolochar	309910.70	0.25	95%	2,70,125.91
Total					**4,50,091.88**

Total CO2 e Emission from Captive Power Plant - **4,50,091.88 TPA**

Thus, the cumulative CO_2e emitted from the project after proposed expansion with sum of table 1-4 is **8,60,423.90 tons CO_2e/Annum**.

[Reference Point: Source: Report on Greenhouse Gas Emissions from Major Industrial Sources –III Iron and
Steel Production by International Energy Agency and USEPA; Technical Support Document for the Ferroalloy Production Sector: Proposed Rule for Mandatory Reporting of Greenhouse Gases;]

Mitigation measures to reduce Carbon Footprints

With the growing concern over climate change, steel makers are faced with the challenge of finding ways of lowering CO_2 emissions without seriously undermining process efficiency or considerably adding to costs. The iron and steel industry are the largest industrial source of CO_2 emissions due to the energy intensity of steel production, its reliance on carbon-based fuels and reductants.

The technological compendium of industries suggests the need to shift from traditional carbon intensive technologies for iron and steel production to low-carbon environment

friendly technologies. Following are the measures which shall be adopted in coming years by the industries to reduce the overall carbon footprints

- Energy Monitoring & Management System
- Hot charging process of continuously cast products at higher temperature directly to Rolling Mills which eliminate the need for re-heating furnaces.
- Scoping the minimum use of Reheating Furnaces
- Adoption of Variable Voltage Variable Frequency (VVVF) Drives for high capacity electric motors
- Minimising energy consumption and improving the energy efficiency of the process ○ Changing to a fuel and/or reducing agent with a lower CO2 emission factor; ○ Capturing the CO2 and storing it underground.
- Sufficient and affordable renewable energy needs to be implemented in the industry
- Installing state of art cleaner technologies
- Afforestation and Plantation
- Metallurgical wastes (Slag, Sludge, scales, fines, dust) into Sintering contributes significantly for reducing carbon dioxide emissions
- Availability of supporting infrastructure (Carbon capture and storage (CCS) and Hydrogen networks) needs to be accelerated, especially for industries, to support the transition to low carbon/carbon neutral technologies
- Supporting the deployment of Digital Product Passports (DPPs) in the downstream products and applications of steel (e.g., in construction and transportation industries) can improve the process of steel recovery and reuse. The design of DPPs usually contains product related information by manufacturers, including instructions on disassembly and dismantling. If followed correctly during the recycling or end-of-life phase of steel products, steel recovery rates can be enhanced.
- The continuation and reinforcement of the promotion of sustainable means of transport for commuters, such as bicycles, public transport and, most of all, car-pooling would contribute to reducing carbon emissions

MEASURES BEING TAKEN BY SHAKAMBHARI ISPAT & POWER LIMITED

The Company has taken some plan under this expansion proposal, which shall be considered as attempts towards clean technology.

- Direct hot charging of billets from SMS to rolling mill.
- Promoting minimum use of vehicles during plant visit.
- Installation solar light system on the roof top of administrative building for office lighting purpose.
- Increasing afforestation in and around the factory premises.
- Promotion of adequate affordable renewable energy in the industry.
- The most important and considerable point here is that SIPL is generating 54 MW power as green energy by using sensible heat through Waste Heat Recovery Boilers (WHRB) installed with individual DRI Kilns (4x100TPD+2x350 TPD & 2x600 TPD) with existing project.
- The use of sensible heat generated during the sponge-iron-making process for power generation falls under criteria of green energy generation.
- Total 63 MW power shall be generated through WHRBs as cogeneration source of power.

- Thus, by using the green energy through WHRB SIPL shall contribute in carbon sequestration with restricting the CO2 e Emission of 1700883TPA. The United Nations Framework Convention on Climate Change also considers electricity generated through WHR System as green, therefore, such projects are eligible for earning carbon credits.
- The continuation and reinforcement of the promotion of sustainable means of transport for commuters, such as bicycles, public transport and, most of all car-pooling would contribute to reducing carbon emissions.

Attempts to reduce Carbon emission/to bring down Carbon intensity

- Shakambhari Ispat & Power Limited shall prefer direct charging of hot billets to rolling mills from SMS. This attempt will remarkably reduce dependency on re-heating furnace and burning of fossil fuel like LSHS/LDO and consequently reduce the CO_2 emission. Company shall always scope the optimal use of reheating furnaces proposed in expansion project.
- Company further proposed to generate the **9 MW** Power as green energy through blast furnace gas.
- SIPL has purchased 10 Nos. of EV (Electric Vehicle) cars and re-charging of these batteries shall be through electricity generated from solar panel planned to be installed.

These moves should be considered as its positive attempts to bring down Carbon intensity.

Moreover, the company proposes uses of Variable Frequency Drive ID Fans, Energy Monitoring & Management System, Regenerative Burners in Re-heating Furnace of Rolling Mills, Adoption of Variable Voltage Variable Frequency (VVVF) Drives for high capacity electric motors, Installing state of art cleaner technologies.

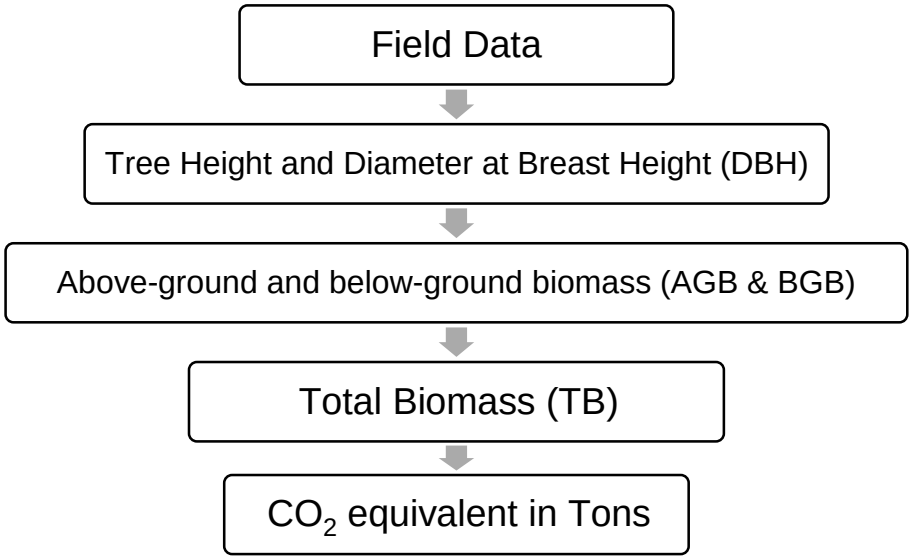
Carbon Sequestration

Carbon sequestration is defined as the removal of carbon dioxide from the atmosphere and storage in a system. Carbon sequestration is gaining its importance in carbon credit and trading. Identification of many CDM (Clean Development Mechanism) projects has offered special flexibility and relevance in the carbon reduction and has helped improve the national economy. These projects have estimated the quantity of carbon in various systems and their dynamics associated with it. With these estimations, several strategies and formulations have evolved quantifying and reducing the carbon foot print.

No doubt carbon sequestration can be achieved through various systems, but trees form to be the largest terrestrial sink of carbon dioxide. Therefore, the plantation is granted as the most efficient and biggest terrestrial carbon sequestration method. Out of the five most important terrestrial carbon sequestration system (above ground biomass, below ground biomass, litter, wood debris, and soil organic carbon), the above and below ground biomass are the top two in the pool. Biomass of trees develops when plants take in carbon dioxide from the atmosphere in the presence of sunlight and convert them into starch in their tissues. Several studies have revealed that the carbon content in these tissues is half their biomass. So, with their growth and development, trees go on sequestering CO2 from the atmosphere and store in their tissues as carbohydrates. This continues until the death of the tree. The rate of carbon sequestration is however maximum during the early stages of growth in trees when trees try to produce more and more amount of food to grow, meet the energy required by them and to stabilize in their respective environmental conditions.

Estimation of Carbon Sequestration Potential of Trees

There are generally two methods to estimate carbon sequestration in plant biomass. Direct method that involves cutting of the tree and Indirect method that is calculated through the above ground biomass and below ground biomass method without slashing the tree. Being ethically and ecologically sound, the second method was preferred for the present study.



Methodology for Carbon Sequestration from Trees

The girth at breast height (GBH) of the trees was measured using a measuring tape at a height of 1.96 m from the ground surface. The height of the trees was measured using reference method (referring to the height of a nearby building or tower), pencil method and angle method as per the convenience. The above ground biomass (AGB) and below ground biomass (BGB) were then calculated as per the formula is given below.

Basal area (m^2) = $(GBH)^2/4\pi$

Bio-volume (m^3) = Basal area x Height of the tree

AGB (kg) = Bio-volume x Wood density (kg/m^3)

BGB (kg) = AGB x 0.26 (Where 0.26 = Root to Shoot ratio)

Total Biomass (TB) in kg/tree = AGB + BGB

Total Carbon Sequestered (TC) in kg/tree = TB/2

The Carbon content in trees was taken on an average as 50% of the tree biomass. The wood density of the individual tree species was derived from secondary sources. The CO2 equivalent was calculated using the following formula:

CO2e = (TC x 44)/12

Where, 44 and 12 are the molecular and atomic weight of CO_2 and C, respectively.

Shakambhari Ispat & Power Limited. has planted 62200 trees covering (24.45 ha.) land of total project area. The carbon sequestration by plantation shown in the following table:

Table-05

Sl. No.	Plant Specices	Local Name	Periphery (cm.)	Basal Area (M2)	Height (M)	Basal Volume (M3)	Density (Kg/M3)	AGB (Kg)	BGB (Kg)	TB (Kg)	TC (Kg)	CO2e (Kg)	No. Tree	Total CO2e (Kg)
1	Azadirachta indica	Neem	68	0.037	6.5	0.239	900	215.37	56.00	271.37	135.68	497.50	3600	17,91,012
2	Polyalthia longifoila	Debdaru	30	0.007	4	0.029	875	25.08	6.52	31.60	15.80	57.93	1300	75,314
3	Acacia auriculiformis	Sonajhuri	48	0.018	5	0.092	625	57.32	14.90	72.23	36.11	132.42	5970	7,90,550
4	Dalbergia sissoo	Shishu	59	0.028	8	0.222	800	177.38	46.12	223.49	111.75	409.74	6890	28,23,095
5	Ficus benghalensis	Bot	78	0.048	7	0.339	700	237.35	61.71	299.07	149.53	548.29	1200	6,57,944
6	Ficus religiosa	Peepal	95	0.072	10	0.719	700	502.99	130.78	633.76	316.88	1161.90	750	8,71,423
7	Anthocephalus cadamba	Kadam	59	0.028	6	0.166	600	99.77	25.94	125.72	62.86	230.48	4550	10,48,673
8	Mimusops elengi	Bakul	58	0.027	3.5	0.094	1008	94.49	24.57	119.06	59.53	218.28	747.5	1,63,162
9	Albizzia lebbeck	Sreesh	85	0.058	8	0.460	630	289.92	75.38	365.30	182.65	669.72	3680	24,64,555
10	Cono Carpus	Cono Carpus	54	0.023	7	0.163	580	94.26	24.51	118.77	59.38	217.74	18330	39,91,153
11	Caesalpinia pulcherrima	Radhachura	64	0.033	4.5	0.147	530	77.78	20.22	98.00	49.00	179.67	3315	5,95,599
12	Delonix regia	Krishnachura	54	0.023	4.5	0.104	510	53.28	13.85	67.14	33.57	123.08	1820	2,24,008
13	Lagerstroemia speciosa	Jarul	45	0.016	3	0.048	700	33.86	8.80	42.66	21.33	78.21	1105	86,423
14	Millettia pinnata	Karanj	61	0.030	4	0.119	680	80.58	20.95	101.53	50.77	186.14	2145	3,99,281
15	Eucalyptus globulus	Eucalyptus	48	0.018	8	0.147	582	85.41	22.21	107.62	53.81	197.30	455	89,770
16	Alstonia scholaris	Chhatim	72	0.041	4	0.165	700	115.57	30.05	145.61	72.81	266.96	370.5	98,908
17	Wodyetiabifurcata	Fox Tail Palm	45	0.016	2.8	0.045	540	24.38	6.34	30.72	15.36	56.31	585	32,942
18	Artocarpus heterophyllus	Katahal	68	0.037	4.5	0.166	600	99.40	25.84	125.25	62.62	229.62	338	77,611
19	Syzgiumcumini	Jamun	68	0.037	4.2	0.155	700	108.24	28.14	136.38	68.19	250.03	3640	9,10,100
20	Terminalia arjuna	Arjun	68	0.037	7	0.258	750	193.28	50.25	243.53	121.77	446.48	520	2,32,168
21	Areca catechu	Areca	68	0.037	3	0.110	880	97.19	25.27	122.46	61.23	224.51	715	1,60,528
22	Tecoma stans	Ttikoma	68	0.037	3	0.110	580	64.06	16.66	80.71	40.36	147.98	325	48,092
23	Swietenia	Mehguni	68	0.037	5	0.184	750	138.06	35.89	173.95	86.98	318.91	65	20,729
24	Hibiscus rosa-sinensis	Hibiscus	38	0.011	2.5	0.029	700	20.12	5.23	25.35	12.68	46.48	244	11,340
25	Hyophorbe lagenicaulis	Bottle palm	68	0.037	6	0.221	900	198.80	51.69	250.49	125.25	459.23	40	18,369
												TOTAL	62,700	1,76,82,749

The total carbon sequestration by plantation is **17683** tons CO_2e/Annum.

Installation of Solar Facilities:

M/s SIPL has proposed to install 1500Kwp Solar panels to produce non-conventional green energy for office & auxiliary usage. It will be helpful in carbon sequestration as follows shown in Table 06(a) & 06(b). Installation solar panel is under progress.

Table-06(a)

The capacity of Solar Panel	1500 Kwp
Av. Power Generation	0.21 MWh
Power generation in 24 hours (per day)	5.1 MW
Power generation in a year	1861.5MW

Table-06(b)

CARBON SEQUESTRATION	
Av Coal consumption per MW	0.90T
Total Coal consumption for 1861.5 MW	1674.90 T
Total Carbon as FC	1122.18 T
Total CO_2e emission Sequestration	**4118.41T**

Table 05 shows that the total CO_2e sequestration potential from greenbelt development (62,700 nos. trees) is estimated to be **17683 CO_2e/Annum**. This number is aimed to be maintained on a yearly basis target by plantations & gap filling to reduce & sequestrate CO_2 e emissions.

In addition to afforestation, installation of the solar panel shall contribute carbon sequestration up to **4118.41T CO_2e/Annum** i.e. more than 11 Ton/day as shown in table-06(b)

Thus, through various small-scale & large-scale methodologies, the organization aims to minimize its carbon footprint.

CONCLUSION

M/s Shakambhari Ispat & Power Limited is committed to reducing the overall Green House Gases and Ambient pollution levels by adopting cleaner technologies and carrying out ecological development activities. The company aims to reduce carbon emissions by introducing different energy-efficient technologies with usages of renewable energy resources,

Further, with the implementation of Carbon capture and storage (CCS) plants in steel industries, steel plants could progress to become near-zero emitters of CO_2. The commercial viability of CCS partly depends on the price of carbon emissions which is set by government policy. Developing new technologies, such as the HIsarna process, that are designed to generate a nitrogen-free and CO2-rich off gas which will make CO_2 capture & control easier and cheaper.

To conclude, no single option can yield the necessary CO_2 emission reductions but a combination of technologies available can be retrofitted to achieve significant reductions, which is possible after commercial deployment of the same by the Government of India.

****

ANNEXURE-15

techlab
A Computerised Path Lab
NABL Accredited Laboratory
Working Hours : Mon - Sat 8 a.m. 8 p.m., Sun 2 p.m. to p.m.

ID NO. : SIPL-37/042024/00109
NAME : **Mr. Shubham Mishra**
AGE / SEX : 29 Years / Male
REF. DOCTOR : Dr. Shakambhari Ispat & Power LTD

RECEIVED ON: 20.04.2024
REPORTED ON: 22.04.2024
ASSOCIATE : SIPL-37

REPORT OF HAEMATOLOGICAL PROFILE

TEST NAME	RESULTS	UNITS	REFERENCE RANGE
CBC (Complete Blood Count)			
Haemoglobin (Hb%)	15.4	gm/dl	Female 11.5 - 16.5 Male 13.0 - 17.0 Child 11.0 - 15.5
TOTAL COUNT			
Erythrocyte Count	5.36	million/cu.mm	4.5 - 6.5
Platelet Count	1,95,000	Per c.mm	150000 - 450000
TOTAL COUNT			
Leucocyte Count	9,600	/cu.mm	4000 - 10000
DIFFERENTIAL COUNT			
Neutrophil	63	%	51 - 75
Lymphocyte	31	%	21 - 35
Eosinophil	04	%	0 - 6
Monocyte	02	%	1 - 10
Basophil	00	%	0 - 1
PCV	48.9	%	35 - 45
MCV	91.2	fl	80 - 96
MCH	28.7	pg	27 - 30
MCHC	31.5	%	30 - 35
ERYTHROCYTE SEDIMENTATION RATE(ESR) Methodology : Westergren Method	05	mm/hour	Male<70years : upto 14 Male>70years : upto 30 Female <70years : upto 20 Female>70years : upto 35

---------End of Report---------

Please correlate with the clinical conditions.

Dr. Debasis Bhattacharya, MD (Path)
Asst. Professor (WBMES)
Consultant Pathologist

Dr. Papia Mukherjee, Ph. D
Consultant Biochemist

Dr. Gautam Gupta, MD
Consultant Biochemist

Dr. Sadhana Ganguli, MBBS, Ph. D
Ex. Prof. Pathology (Haematology)
IPGME & R and SSKM Hospital
Consultant Pathologist

techlab

NABL Accredited Laboratory

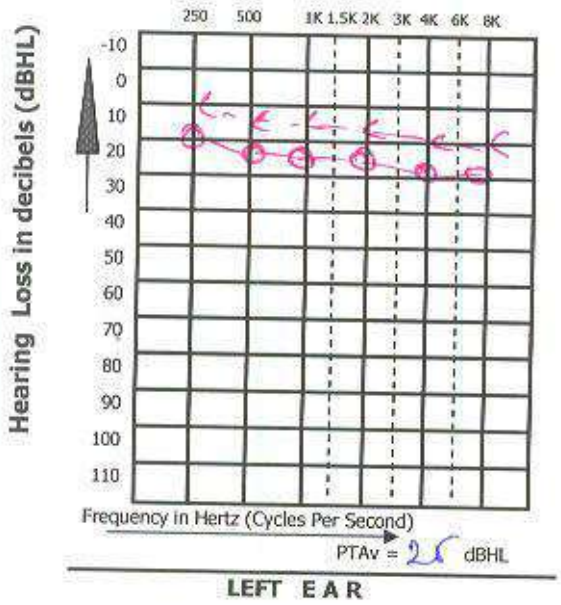
13/1C, Balaram Ghosh Street, Kolkata-700004, Phone : (033) 2555 2055 / 1095
Email : tlab_2006@hotmail.com

Shakambhari Ispat & Power LTD.
Purulia, W.B - 723121

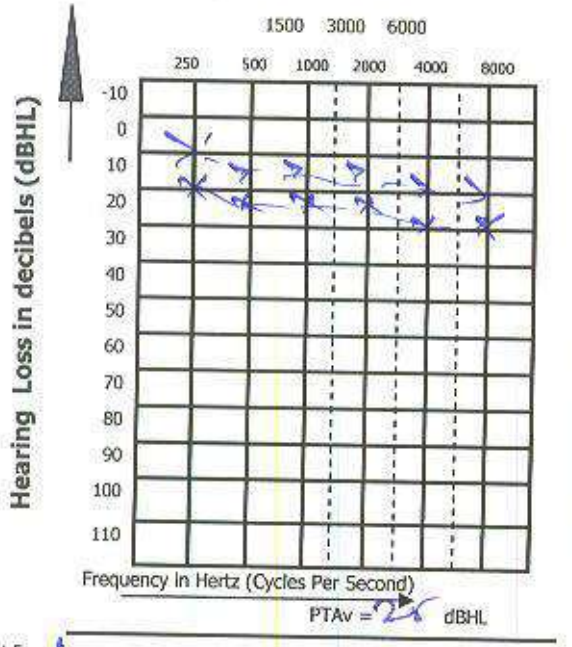
NO	NAME	AGE	DEPT.
109	SUBHAM MISHRA	29	PL0002511

AUDIOGRAM

RIGHT EAR



LEFT EAR



CASE HISTORY

	R	L
AIR (Unmasked)	O	X
AIR (Masked)	△	□
BONE(Unmasked)	<	>
BONE (Masked)	[	]
No Response	↙	↘

RINNE TEST

R +ve L +ve

AUDIOMETRIC WEBER TEST

R L

250 Hz
500 Hz
1000 Hz
2000 Hz
4000 Hz

SPEECH AUDIOMETRY RL		
SRT	R	L
SDS		
Roll Over		

SPECIAL TEST	
R	L
Tone Decay	
S.I.S.I.	
S.A.L.	
A.B.L.B.	
Hypo Recruitment RE/LE	Hypo Recruitment RE/LE
No Recruitment RE/LE	No Recruitment RE/LE

Diagnosis : Right Ear

Left Ear

B/L Normal hearing

B. Kumar
B.KUMAR
AUDIOLOGIST

RCI No. A65115

techlab

NABL Accredited Laboratory

13/1C, Balaram Ghosh Street, Kolkata-700004, Phone : (033) 2555 2055 / 1095
Email : tlab_2006@hotmail.com

SHAKAMBHARI ISPAT & POWER LTD.

Purulia W.B - 723121

(Test Conducted On 20th & 21st April 2024)

No	NAME	AGE	EMP ID / Dept.
109	SUBHAM MISHRA	29	PL0002511

EYE EXAMINATION

Vision Right Eye : 6/6

Vision Left Eye : 6/6
N-6

COLOUR VISION TEST- **NO ABNORMALITY DETECTED**

	Dsph	Dcyl	Axis	VA
RE				
LE				
ADD RE				
ADD LE				

TYPE OF GLASSES -

Bose

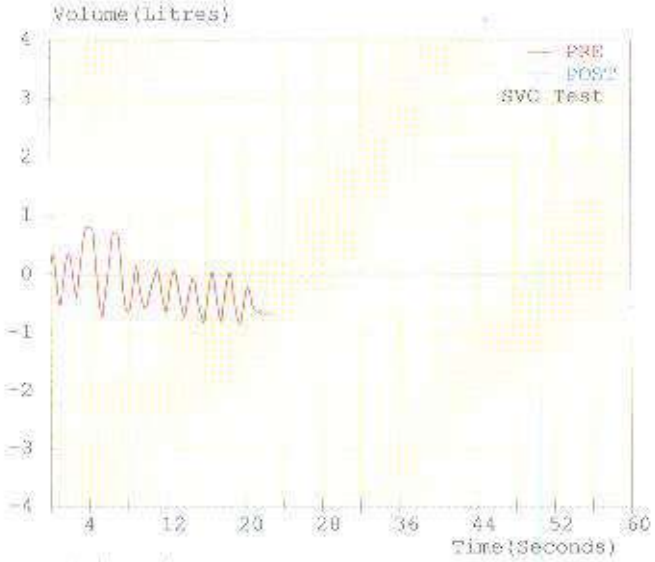
Eye Consultant

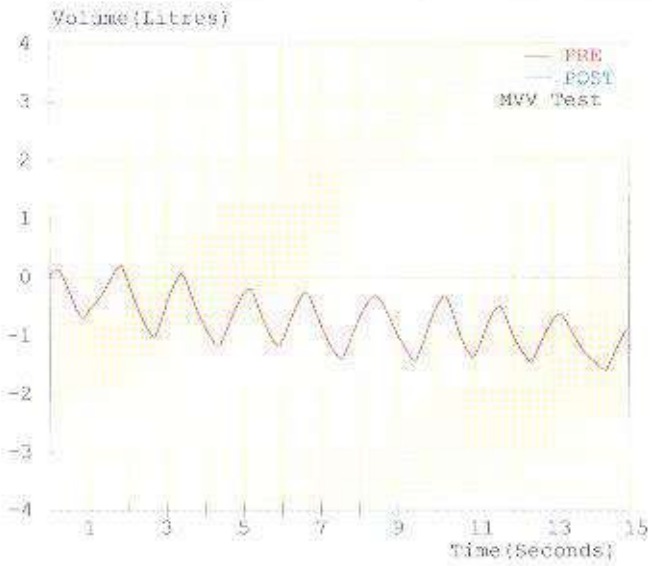
Dr. P. K. Bose
D. O. S (Cal); B. Sc; [illegible]
OPTOMETRIST : EYE CONSULTANT

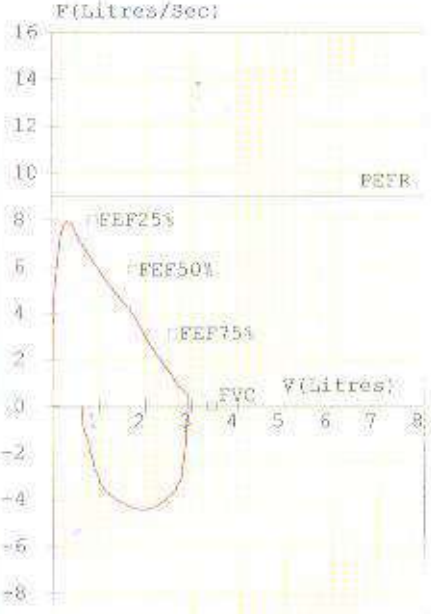
TECHLAB

13/1C ,Balaram Ghosh Street, Kolkata - 700004

Patient: SHUBAM MISHRA	Age	: 29 Yrs	Gender	: Male	
Refd.By:	Height	: 167 Cms	Smoker	: No	
Pred.Eqns: RECORDERS	Weight	: 87 Kgs	Eth. Corr:	100	
Date : 20-Apr-2024 01:29 PM	ID	: SIP 109	Temp	:	

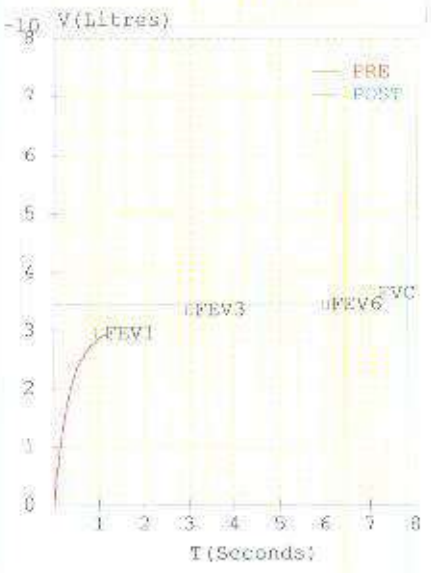






Spirometry Results

Parameter		Pred	M.Pre	%Pred	M.Post	%Pred	%Imp
FVC	(L)	03.45	02.94	085	-----	---	---
FEV1	(L)	02.94	02.86	097	-----	---	---
FEV1/FVC	(%)	85.22	97.28	114	-----	---	---
FEF25-75	(L/s)	04.38	04.15	095	-----	---	---
PEFR	(L/s)	09.02	07.90	088	-----	---	---
FIVC	(L)	-----	02.28	---	-----	---	---
FEV.5	(L)	-----	02.31	---	-----	---	---
FEV3	(L)	03.35	02.94	088	-----	---	---
PIFR	(L/s)	-----	04.43	---	-----	---	---
FEF75-85	(L/s)	-----	01.80	---	-----	---	---
FEF.2-1.2	(L/s)	07.48	06.52	087	-----	---	---
FEF 25%	(L/s)	08.30	06.62	080	-----	---	---
FEF 50%	(L/s)	05.87	04.56	078	-----	---	---
FEF 75%	(L/s)	03.13	02.31	074	-----	---	---
FEV.5/FVC	(%)	-----	78.57	---	-----	---	---
FEV3/FVC	(%)	97.13	100.00	103	-----	---	---
FET	(Sec)	-----	01.18	---	-----	---	---
ExplTime	(Sec)	-----	30.04	---	-----	---	---
Lung Age	(Yrs)	029	030	103	-----	---	---
FEV6	(L)	03.45	-----	---	-----	---	---
FIF 25%	(L/s)	-----	03.62	----------		---	---
FIF 50%	(L/s)	-----	03.92	----------		---	---
FIF 75%	(L/s)	-----	04.43	----------		---	---
SVC	(L)	-----	01.67	---	-----	---	---
ERV	(L)	01.48	00.05	003	-----	---	---
IRV	(L)	-----	00.45	---	-----	---	---
VE	(L/min)	-----	26.82	---	-----	---	---
RF	(1/min)	-----	35.29	---	-----	---	---
Ti	(sec)	-----	00.90	---	-----	---	---
Te	(sec)	-----	00.80	---	-----	---	---
VT	(L)	-----	00.76	---	-----	---	---
VT/Ti		-----	00.84	---	-----	---	---
Ti/Ttot		-----	00.53	---	-----	---	---
IC	(L)	-----	01.21	---	-----	---	---
MVV	(L/min)	138	038	028	-----	---	---
MRf	(1/min)	-----	38.36	---	-----	---	---
MVT	(L)	-----	01.00	---	-----	---	---



Pre Medication Report Indicates

Spirometry within normal limits as (FEV1/FVC)%Pred >95 and FVC%Pred >

Dr. N PAUL
General Physician
Reg. No. 19017 (W.B)

techlab

NABL Accredited Laboratory

13/1C, Balaram Ghosh Street, Kolkata-700004, Phone : (033) 2555 2055 / 1095
Email : tlab_2006@hotmail.com

ID NO.	: SIPL-37/042024/00109		
NAME	: Mr. Shubham Mishra	RECEIVED ON	: 20-04-2024
AGE / SEX	: 29 Years / Male	REPORTED ON	: 22-04-2024
REF. DOCTOR	: Dr. Shakambhari Ispat & Power LTD	ASSOCIATE	: SIPL

CHEST - PA ERECT VIEW

Lung fields are clear.
Both hila appears normal.
Cardiac shadow appears normal.
Domes are smoothly outlined.
Costophrenic angles are clear.
Bony thorax shows no obvious abnormality.
Soft tissue of chest wall show no obvious abnormality.

IMPRESSION : Study within normal limit.

Dr Sarmishtha Guha
DNB(Radiodiagnosis)
Consultant Radiologist
Reg.No.WB MC 53151


SUBHAM MISHRA 29
Sex Male
ID P109
HEST
8cm

ID NO. : SIPL-37/042024/00117
NAME : **Mr. Promod Tripathi**
AGE / SEX : 26 Years / Male
REF. DOCTOR : Dr. Shakambhari Ispat & Power LTD

RECEIVED ON: 20.04.2024
REPORTED ON: 22.04.2024
ASSOCIATE : SIPL-37

REPORT OF HAEMATOLOGICAL PROFILE

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Erythrocyte Count	4.79	million/cu.mm	4.5 - 6.5
Platelet Count	2,97,000	Per c.mm	150000 - 450000
TOTAL COUNT			
Leucocyte Count	10,600	/cu.mm	4000 - 10000
DIFFERENTIAL COUNT			
Neutrophil	68	%	51 - 75
Lymphocyte	28	%	21 - 35
Eosinophil	03	%	0 - 6
Monocyte	01	%	1 - 10
Basophil	00	%	0 - 1
PCV	44.5	%	35 - 45
MCV	94.4	fl	80 - 96
MCH	30.4	pg	27 - 30
MCHC	32.4	%	30 - 35
ERYTHROCYTE SEDIMENTATION RATE(ESR) Methodology : Westergren Method	05	mm/hour	Male<70years : upto 14 Male>70years : upto 30 Female <70years : upto 20 Female>70years : upto 35

--------End of Report--------

Please correlate with the clinical conditions.

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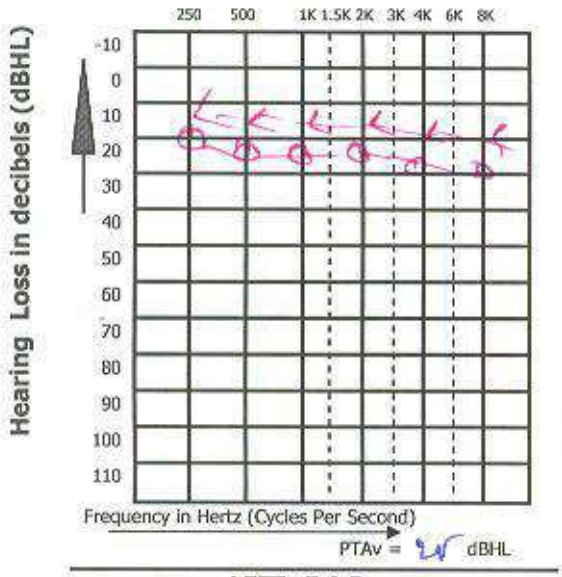
Shakambhari Ispat & Power LTD.
Purulia, W.B - 723121

NO	NAME	AGE	DEPT.
117	PROMOD TRIPATHI	26	PL0003312

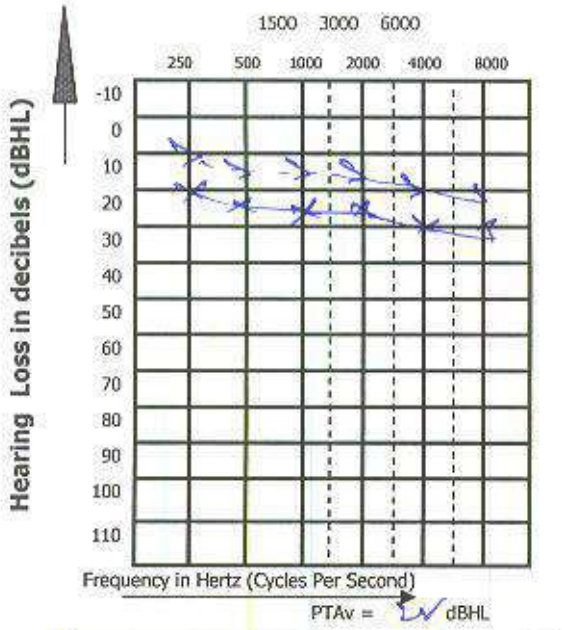
AUDIOGRAM

CASE HISTORY

RIGHT EAR



LEFT EAR



	R	L
AIR (Unmasked)	O	X
AIR (Masked)	△	□
BONE(Unmasked)	<	>
BONE (Masked)	[	]
No Response	↙	↘

RINNE TEST

R +ve L +ve

AUDIOMETRIC WEBER TEST

R 250 Hz L
500 Hz
1000 Hz
2000 Hz
4000 Hz

SPEECH AUDIOMETRY RL		
S R T	R	L
S D S		
Roll Over		

SPECIAL TEST	
R	L
Tone Decay	
S.I.S.I.	
S.A.L.	
A.B.L.B.	
Hypo Recruitment RE/LE	Hypo Recruitment RE/LE
No Recruitment RE/LE	No Recruitment RE/LE

Diagnosis : Right Ear } B/L Sensorineural Hearing Loss

Left Ear

B.KUMAR
AUDIOLOGIST

RCI No. A65115

NABL Accredited Laboratory

techlab

13/1C, Balaram Ghosh Street, Kolkata-700004, Phone : (033) 2555 2055 / 1095
Email : tlab_2006@hotmail.com

SHAKAMBHARI ISPAT & POWER LTD.

Purulia W.B - 723121

(Test Conducted On 20th & 21st April 2024)

No	NAME	AGE	EMP ID / Dept.
117	PROMOD TRIPATHI	26	PL0003312

EYE EXAMINATION

Vision Right Eye : 6/6

Vision Left Eye : 6/6
N-6

COLOUR VISION TEST- **NO ABNORMALITY DETECTED**

	Dsph	Dcyl	Axis	VA
RE				
LE				
ADD RE				
ADD LE				

TYPE OF GLASSES -

Bose

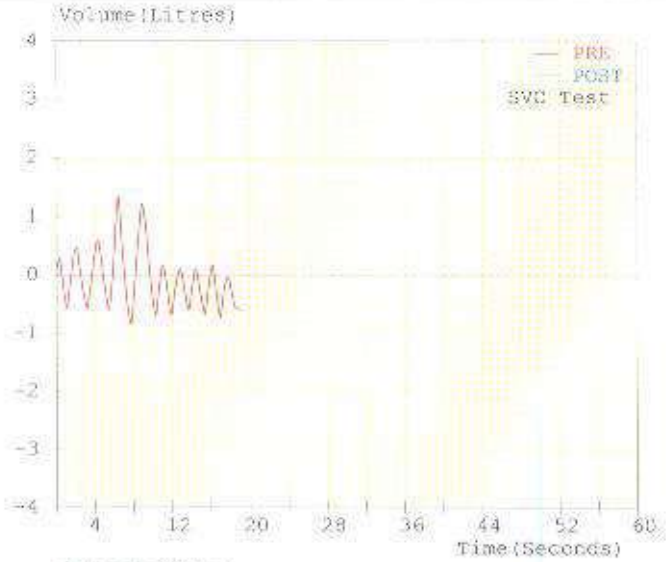
Eye Consultant

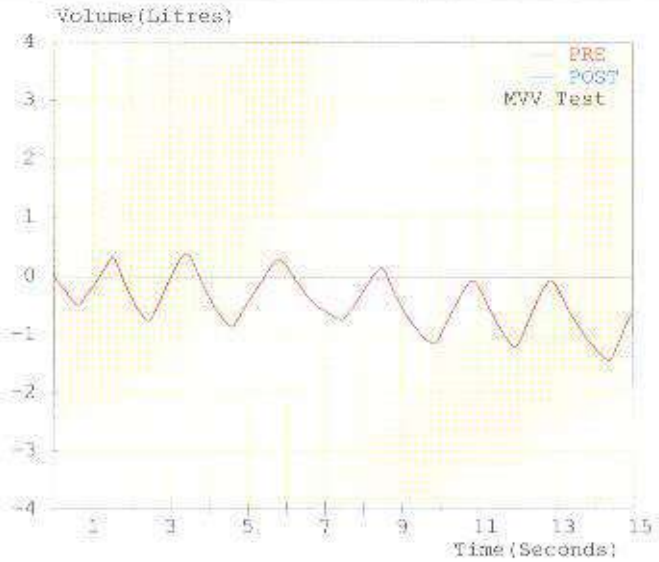
Dr. P. K. Bose
D.O.S. ... M.S. (Cal)
OPTOMETRIST - EYE CONSULTANT

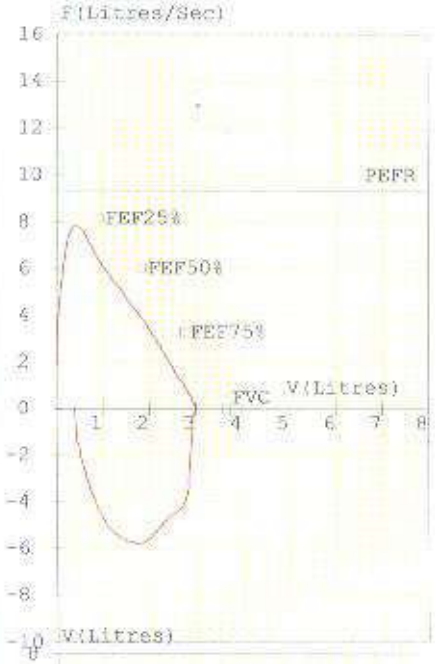
TECHLAB

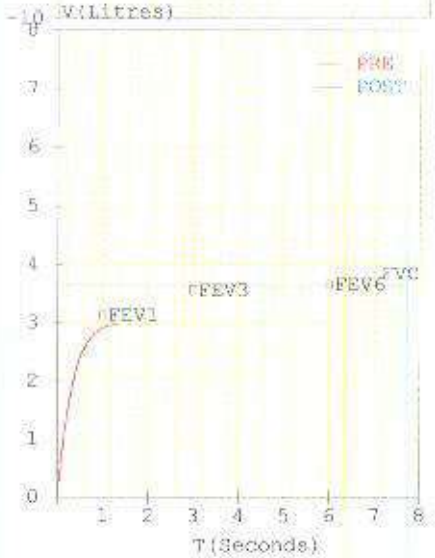
13/1C ,Balaram Ghosh Street, Kolkata - 700004

Patient: PRAMOD TRIPATHI		Age	: 26 Yrs	Gender	: Male
Refd.By:		Height	: 170 Cms	Smoker	: No
Pred.Eqns: RECORDERS		Weight	: 72 Kgs	Eth. Corr	: 100
Date : 20-Apr-2024 02:48 PM		ID	: SIP 117	Temp	:









Spirometry Results

Parameter		Pred	M.Pre	%Pred	M.Post	%Pred	%Imp
FVC	(L)	03.65	02.98	082	-----	---	---
FEV1	(L)	03.12	02.92	094	-----	---	---
FEV1/FVC	(%)	85.48	97.99	115	-----	---	---
FEF25-75	(L/s)	04.57	04.35	095	-----	---	---
PEFR	(L/s)	09.34	07.79	083	-----	---	---
FIVC	(L)	-----	02.56	---	-----	---	---
FEV.5	(L)	-----	02.38	---	-----	---	---
FEV3	(L)	03.54	02.98	084	-----	---	---
PIFR	(L/s)	-----	05.77	---	-----	---	---
FEF75-85	(L/s)	-----	02.60	---	-----	---	---
FEF.2-1.2	(L/s)	07.84	06.70	085	-----	---	---
FEF 25%	(L/s)	08.16	06.88	084	-----	---	---
FEF 50%	(L/s)	06.04	04.73	078	-----	---	---
FEF 75%	(L/s)	03.29	02.61	079	-----	---	---
FEV.5/FVC	(%)	-----	79.87	---	-----	---	---
FEV3/FVC	(%)	96.99	100.00	103	-----	---	---
FET	(Sec)	-----	01.31	---	-----	---	---
ExplTime	(Sec)	-----	03.05	---	-----	---	---
Lung Age	(Yrs)	026	028	108	-----	---	---
FEV6	(L)	03.65	-----	---	-----	---	---
FIF 25%	(L/s)	-----	04.00	-----	-----	---	---
FIF 50%	(L/s)	-----	05.25	-----	-----	---	---
FIF 75%	(L/s)	-----	05.64	-----	-----	---	---
SVC	(L)	-----	02.45	---	-----	---	---
ERV	(L)	01.55	00.37	024	-----	---	---
IRV	(L)	-----	00.75	---	-----	---	---
VE	(L/min)	-----	32.45	---	-----	---	---
Rf	(1/min)	-----	27.27	---	-----	---	---
Ti	(sec)	-----	01.10	---	-----	---	---
Te	(sec)	-----	01.10	---	-----	---	---
VT	(L)	-----	01.19	---	-----	---	---
VT/Ti		-----	01.08	---	-----	---	---
Ti/Ttot		-----	00.50	---	-----	---	---
TC	(L)	-----	01.94	---	-----	---	---
MVV	(L/min)	144	031	022	-----	---	---
MRf	(1/min)	-----	28.35	---	-----	---	---
MVT	(L)	-----	01.09	---	-----	---	---

Pre Medication Report Indicates
Spirometry within normal limits as (FEV1/FVC)%Pred >95 and FVC%Pred >

Dr. N PAUL
General Physician
Reg. No. 19017 (W.B)

techlab

13/1C, Balaram Ghosh Street, Kolkata-700004, Phone : (033) 2555 2055 / 1095
NABL Accredited Laboratory
Email : tlab_2006@hotmail.com

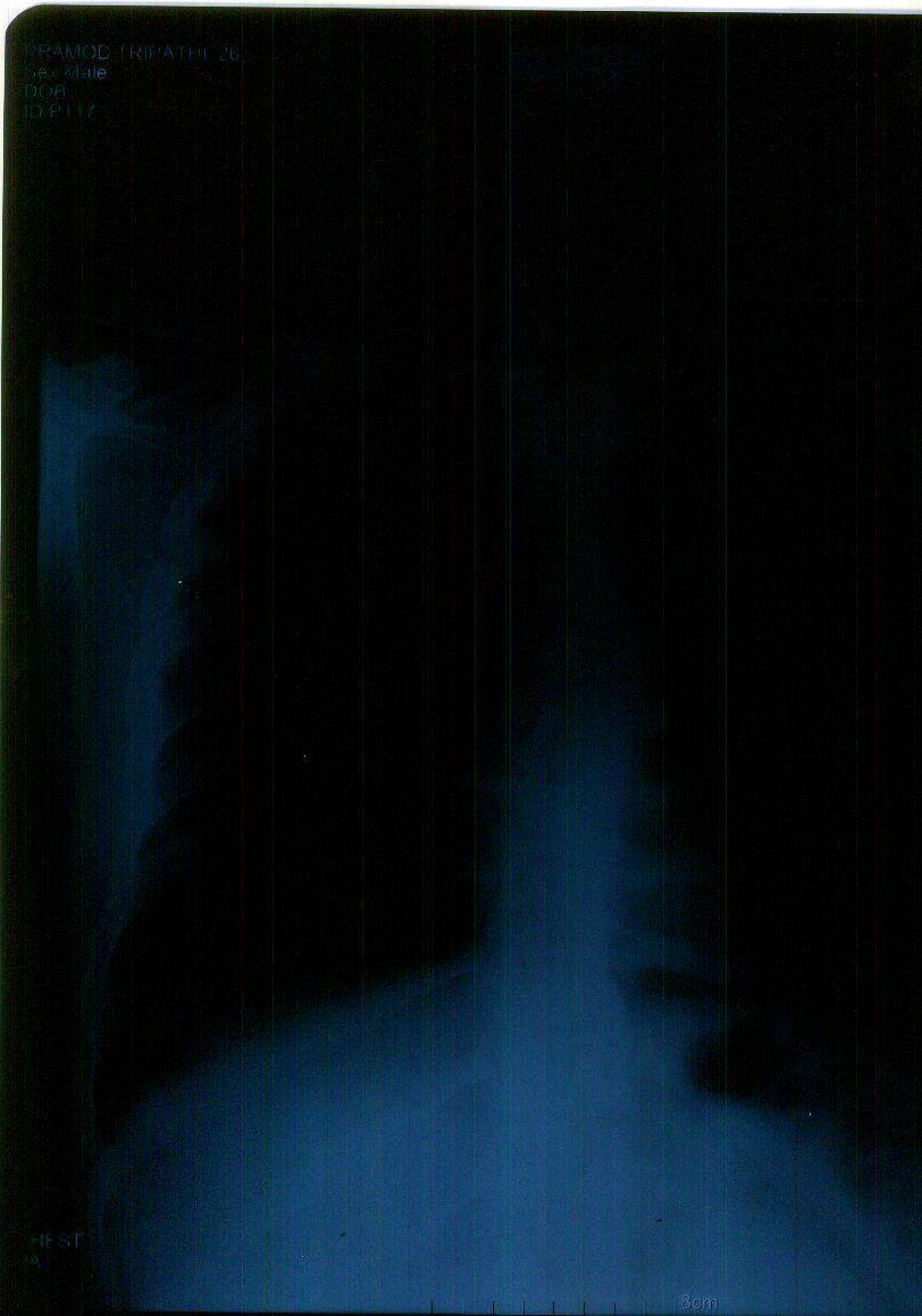
ID NO.	: SIPL-37/042024/00117		
NAME	: Mr. Promod Tripathi	RECEIVED ON	: 20-04-2024
AGE / SEX	: 26 Years / Male	REPORTED ON	: 22-04-2024
REF. DOCTOR	: Dr. Shakambhari Ispat & Power LTD	ASSOCIATE	: SIPL

CHEST - PA ERECT VIEW

Lung fields are clear.
Both hila appears normal.
Cardiac shadow appears normal.
Domes are smoothly outlined.
Costophrenic angles are clear.
Bony thorax shows no obvious abnormality.
Soft tissue of chest wall show no obvious abnormality.

IMPRESSION : Study within normal limit.

Dr Sarmishtha Guha
DNB(Radiodiagnosis)
Consultant Radiologist
Reg.No.WB MC 53151


PRAMOD TRIPATHI 26
Sex Male
DOB
ID PT17
TEST
8cm

ANNEXURE-16

CORPORATE ENVIRONMENTAL POLICY

M/S Shakambhari Ispat & Power Limited (SIPL) is engaged in production of steel products is committed towards clean and sustainable environment. The mission of Shakambhari Ispat & Power Limited is to produce steel in an environment friendly manner and strive to:

- Integrate sound environmental management practices in all the activities.
- Conduct the operations in environmentally responsible manner to minimize pollution and its' impact on environment.
- Comply with applicable legal and other requirements related to environmental aspects of the operations and strive to go beyond. The environmental management cell will be headed by EHS-Head.
- The company shall ensure that deviations from this policy and cases of violations/non-compliances of Environment or Forest Laws, if any, shall be reported to the Board of Directors through Jt. M.D. and shall identify and designate responsible person for ensuring compliance with the Environmental Laws and Regulations.
- Conserve energy, and other natural resources, minimize waste generation and promote recovery, recycle and reuse practices.
- Increase greenery in and around the plant.
- Ensure continual improvement in environmental performance by setting & reviewing objectives & targets.
- Encourage environmental awareness amongst employees and the general populace around the plant.
- Maintain transparency in matters of Environmental Compliance.

The hierarchical system/administrative order to deal with issues related to environmental compliance shall be as follows:

For **M/S Shakambhari Ispat & Power Limited**

Director

ANNEXURE-17

पंजाब नैशनल बैंक punjab national bank

DEMAND NOTICE

[illegible]

Sl. No.	a) Name of the borrower / guarantor with address b) Branch from which facilities were availed	Particulars of secured assets being enforced through the notice	a) Date of NPA b) Date of 13(2) notice c) Amount due as per notice
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Authorised Officer
Punjab National Bank

NOTICE

ELEGANT

[illegible]

JODHPUR WIND FARMS PRIVATE LIMITED

[illegible]

EXTRACT OF STATEMENT OF FINANCIAL RESULTS FOR THE QUARTER ENDED JUNE 30, 2023

(₹ in Lakhs except per share data)

Particulars	Quarter ended		Financial Year ended
	30.06.2023	30.06.2022	31.03.2023
	Un-audited	Un-audited	Audited
Total Income from Operations	[illegible]	[illegible]	[illegible]
Net Profit / (Loss) for the period (before Tax, Exceptional and/or Extraordinary items)	[illegible]	[illegible]	[illegible]
Net Profit / (Loss) for the period before tax (after Exceptional and/or Extraordinary items)	[illegible]	[illegible]	[illegible]
Net Profit / (Loss) for the period after tax (after Exceptional and/or Extraordinary items)	[illegible]	[illegible]	[illegible]
Total Comprehensive Income for the period [Comprising Profit / (Loss) for the period (after tax) and Other Comprehensive Income (after tax)]	[illegible]	[illegible]	[illegible]
Paid up Equity Share Capital	[illegible]	[illegible]	[illegible]
Reserves (excluding Revaluation Reserve)	[illegible]	[illegible]	[illegible]
Securities Premium Account	-	-	-
Net Worth	[illegible]	[illegible]	[illegible]
Paid up Debt Capital / Outstanding Debt	[illegible]	[illegible]	[illegible]
Debt Equity Ratio	[illegible]	[illegible]	[illegible]
Earnings Per Share (of ₹ 10/- each) (for continuing and discontinued operations)			
Basic (₹)	[illegible]	[illegible]	[illegible]
Diluted (₹)	[illegible]	[illegible]	[illegible]
Capital Redemption Reserve	N/A	N/A	N/A
Debenture Redemption Reserve	[illegible]	[illegible]	[illegible]
Debt Service Coverage Ratio	[illegible]	[illegible]	[illegible]
Interest Service Coverage Ratio	[illegible]	[illegible]	[illegible]

Notes:

[illegible]

Place : Ahmedabad
Date : [illegible]

LATUR RENEWABLE PRIVATE LIMITED

[illegible]

EXTRACT OF STATEMENT OF FINANCIAL RESULTS FOR THE QUARTER ENDED JUNE 30, 2023

(₹ in Lakhs except per share data)

Particulars	Quarter ended		Financial Year ended
	[illegible]	[illegible]	[illegible]
	Un-audited	Un-audited	Audited
Total Income from Operations	[illegible]	[illegible]	[illegible]
Net Profit / (Loss) for the period (before Tax, Exceptional and/or Extraordinary items)	[illegible]	[illegible]	[illegible]
Net Profit / (Loss) for the period before tax (after Exceptional and/or Extraordinary items)	[illegible]	[illegible]	[illegible]
Net Profit / (Loss) for the period after tax (after Exceptional and/or Extraordinary items)	[illegible]	[illegible]	[illegible]
Total Comprehensive Income for the period [Comprising Profit / (Loss) for the period (after tax) and Other Comprehensive Income (after tax)]	[illegible]	[illegible]	[illegible]
Paid up Equity Share Capital	[illegible]	[illegible]	[illegible]
Reserves (excluding Revaluation Reserve)	[illegible]	[illegible]	[illegible]
Securities Premium Account	-	-	-
Net Worth	[illegible]	[illegible]	[illegible]
Paid up Debt Capital / Outstanding Debt	[illegible]	[illegible]	[illegible]
Debt Equity Ratio	[illegible]	[illegible]	[illegible]
Earnings Per Share (of ₹ 10/- each) (for continuing and discontinued operations)			
Basic (₹)	[illegible]	[illegible]	[illegible]
Diluted (₹)	[illegible]	[illegible]	[illegible]
Capital Redemption Reserve	N/A	N/A	N/A
Debenture Redemption Reserve	[illegible]	[illegible]	[illegible]
Debt Service Coverage Ratio	[illegible]	[illegible]	[illegible]
Interest Service Coverage Ratio	[illegible]	[illegible]	[illegible]

Notes:

[illegible]

Place : Ahmedabad
Date : [illegible]

মনে হয় ইন্ডিয়া নাম ওঁর খুব পছন্দ হয়েছে

শনিবার থেকে দক্ষিণবঙ্গে ভারী বৃষ্টি

আজকালের প্রতিবেদন

পোস্টিং মামলায় সিবিআই, ইডি

আজকালের প্রতিবেদন

পুরীর বঙ্গনিবাসের নকশা জমা পড়ল

আজকালের প্রতিবেদন

মণিপুর নিয়ে আপের প্রতিবাদ

আজকালের প্রতিবেদন

টাকাভর্তি ব্যাগ ফেরাল পুলিশ

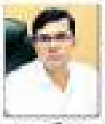
আজকালের প্রতিবেদন

ভুয়ো কল সেন্টার, গ্রেপ্তার ১৫

আজকালের প্রতিবেদন

আইএএস পদ থেকে ইস্তফা অনুরাগের

আজকালের প্রতিবেদন



প্রেসিডেন্সিতে

আজকালের প্রতিবেদন

জরিমানা

বিধাননগরে ছিনতাই, গ্রেপ্তার ২

আজকালের প্রতিবেদন

ANNEXURE-18

ENVIRONMENTAL DATA INFORMATION BOARD

ANNEXURE-19

TCLP REPORT

1.	Name of the Industry	:	Shakambhari Ispat & Power Ltd.
2.	Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121
3.	Report No.	:	ENV/282B/S/M(i)/24-25
4.	Date of sampling	:	12.09.2024
5.	Reporting Date	:	23.09.2024
6.	Type of sample	:	Slag
7.	Location	:	Ferro Manganese Slag

Sl. No.	PARAMETERS	METHOD	UNIT	RESULTS
1.	Iron (Fe)	EPA 1311 : 1992 / EPA 3050 B, 1996/EPA 200.9 : 1998	mg./l	3.90
2.	Zinc (Zn)	EPA 1311 : 1992 / APHA 23rd Ed., 3111 B : 2017	mg./l	2.80
3.	Copper (Cu)	EPA 1311 : 1992 / EPA 3050 B, 1996/EPA 200.6 : 1998	mg./l	1.60
4.	Nickel (Ni)	EPA 1311 : 1992 / APHA 23rd Ed., 3111 B : 2017	mg./l	0.80
5.	Lead (Pb)	EPA 1311 : 1992 / EPA 3050 B, 1996/EPA 200.9 : 1998	mg./l	0.26
6.	Cadmium (Cd)	EPA 1311 : 1992 / EPA 3050 B, 1996/IS 3050 (Part 46)	mg./l	0.40
7.	Chromium (Cr)	APHA 23rd Ed., 3111 B : 2017	mg./l	0.36

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

TCLP REPORT

1.	Name of the Industry	:	Shakambhari Ispat & Power Ltd.
2.	Address	:	Vill. – Madandih, P.O. – Bartoria, P.S. – Neturia, Dist – Purulia, (WB)– 723121
3.	Report No.	:	ENV/282B/S/M(ii)/24-25
4.	Date of sampling	:	12.09.2024
5.	Reporting Date	:	23.09.2024
6.	Type of sample	:	Slag
7.	Location	:	Silico Manganese Slag

Sl. No.	PARAMETERS	METHOD	UNIT	RESULTS
1.	Iron (Fe)	EPA 1311 : 1992 / EPA 3050 B, 1996/EPA 200.9 : 1998	mg./l	4.50
2.	Zinc (Zn)	EPA 1311 : 1992 / APHA 23rd Ed., 3111 B : 2017	mg./l	3.80
3.	Copper (Cu)	EPA 1311 : 1992 / EPA 3050 B, 1996/EPA 200.6 : 1998	mg./l	1.80
4.	Nickel (Ni)	EPA 1311 : 1992 / APHA 23rd Ed., 3111 B : 2017	mg./l	1.16
5.	Lead (Pb)	EPA 1311 : 1992 / EPA 3050 B, 1996/EPA 200.9 : 1998	mg./l	0.62
6.	Cadmium (Cd)	EPA 1311 : 1992 / EPA 3050 B, 1996/IS 3050 (Part 46)	mg./l	0.28
7.	Chromium (Cr)	APHA 23rd Ed., 3111 B : 2017	mg./l	0.10

Remarks : Result relates only to the sample tested.

Reviewed By :

Indrani Bhattacharya
INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Authorised Signatory :

Dr. AJOY PAUL
Quality Manager

<End of Report>