



SATVIK ENTERPRISES LIMITED

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Date: 24th January, 2026

To,
Dr. Shahida Parvin Quazi, Scientist-E,
Integrated Regional Office, Kolkata,
Ministry of Environment, Forest and Climate Change, Govt. of India
IB-198, Sector-III, Salt Lake City,
Kolkata-700106

Subject: Six Monthly Compliance Report for the period of April, 2024 to September, 2024 for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, PO: Hat Asuria, PS: Barjora, District: Bankura, West Bengal by M/s Satvik Enterprises Limited by M/s Satvik Enterprises Limited

Ref.: MoEF&CC File No. IA-J-11011/154/2022-IA-II(IND-I), dtd. 12th October, 2023

Dear Sir,

With reference to the above-mentioned Environmental Clearance letter (File No. IA-J-11011/154/2022-IA-II(IND-I), dtd. 12th October, 2023, we do hereby submit Compliance Report for the period of April, 2024 to September, 2024 for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, PO: Hat Asuria, PS: Barjora, District: Bankura, West Bengal by M/s Satvik Enterprises.

Thanking you,

Yours faithfully,
For **M/s Satvik Enterprises Limited**



Vikash Agarwal
Managing Director

Mouza: Sahebdihi, PO: Hat Asuria, PS: Barjora,
District: Bankura, West Bengal

Encl.: as above.

COMPLIANCE STATUS ON ENVIRONMENTAL CLEARANCE

Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Chrome Ore Briquette Plant (10 TPH) by M/s. Satvik Enterprises Limited located at Mouza: Sahebdihi, PS: Barjora, District: Bankura, West Bengal

Vide Letter No.: F-No. IA-J-11011/154/2022-IA-II(IND-I), dtd. 12th October, 2023

A. SPECIFIC CONDITIONS:

SL NO.	COMPLIANCE CONDITIONS	COMPLIANCE STATUS
i.	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.	All conditions will be complied against the EC. File no. IA-J-11011/154/2022-IA-II(IND-I)) dt. 12th October, 2023. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project it will be implemented and complied.
ii.	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, MoEFandCC in this regard.	The project proponent will be utilizing modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing more than emitted once the operation will be started. The implementation shall be submitted to the IRO, MoEF&CC in this regard.

iii.	There are two schools in the nearby areas namely Hat Ashuria High School & Suripara Primary School which are located around 0.8 kms and 1.03 kms. distance from the project site in E & SE direction respectively. There is also an ITI college located at a distance of 0.2 km in NE direction and Harirampur Kali Temple at a distance of 1.5 in WSW direction. Project Proponent shall take appropriate environmental safeguard measures to minimise the impact on these ESA's. PP needs to strengthen green belt all around the plant area to reduce the dust pollution. The PP shall also include some of these locations in its environmental monitoring programme.	All environmental safeguard measures shall be taken for the plant during operation. The company shall take appropriate environmental safeguard measures to minimise the impact on the habitation of the locals. Out of the total plant area of 2.18 hectares (5.38 acres), 0.72 Hectares (1.78 acres, 33% of the total area) shall be covered under Green Belt. Around 1,800 number of trees (@2500 nos. of tree per hectares) has been considered under plantation programme in greenery development. The safeguard measures are attached as ANNEXURE-1.
iv.	The water requirement of 70 m³/day shall be obtained from from the water supply of Barjora Gram Panchayat Samity after obtaining necessary permission from the Competent Authority. No ground water extraction is permitted.	Permission letter vide Memo No. 183/BPS/10 dated 22nd December 2022 has been enclosed as ANNEXURE -2.

v.	Three tier Green Belt shall be developed in at least 33% of the project area in the monsoons of 2023 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 ESA's. The Unit shall also provide green belt around the two educational institutions in the close vicinity of the industry. Compliance status in this regard, shall be submitted to concerned Regional Office of the MoEF&CC.	Out of the total plant area of 2.18 hectares (5.38 acres), 0.72 Hectares (1.78 acres, 33% of the total area) shall be covered under Green Belt. Around 1,800 number of trees (@2500 nos. of tree per hectares) has been considered under plantation programme in greenery development. However, as soon as our project nearing its completion, we shall arrange similar such activities closer to monsoon 2026. The Unit shall also provide green belt around the two educational institutions in the close vicinity of the industry from the same season.
vi.	All the commitments made towards socio-economic development of the nearby villages 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. 1.14 Crores shall be strictly implemented and progress shall be submitted to the Regional	All the commitments made towards socio-economic development of the nearby villages will be satisfactorily implemented definitely. 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. 1.14 Crores shall be strictly implemented

	Office of MoEF&CC.	and progress shall be submitted to the Regional Office of MoEFandCC. Please refer socio economic survey enclosed as ANNEXURE 3 .
vii.	As committed, PP shall adopt Hatsuria Village and prepare and implement the action plan to develop it into model village.	It has been decided to develop one nearby village namely Hat Asuria into model village by addressing the socio-economic needs of the villagers as committed and accordingly the same shall be taken up.

B. GENERAL CONDITIONS:

SL NO.	COMPLIANCE CONDITIONS	COMPLIANCE STATUS
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.	The company will make sure to adhere to the condition in the Environment Clearance (EC) granted to the project. It will be complied.
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 Court of Law, if any, as may be applicable to this project.	Complied.

II. Air quality monitoring and preservation

i.	The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission 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.	The PP will install CEMS & CAAQMS at process stacks as per the guidelines issued by the MOEF&CC and WBPCB for parameters mentioned in the EC under the EPA under 1986. This point will be complied when the project is nearing completion.
ii.	The project proponent shall carry out 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.	Continuous Ambient Air Quality Monitoring Reports 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) are attached as Annexure - 4.
iii.	The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through laboratories recognized under	It shall be complied when the project will start operation.

	Environment (Protection) Act, 1986 or NABL accredited laboratories.														
iv.	Sampling facility at process stacks shall be provided as per CPCB guidelines for manual monitoring of emissions.	We will provide sampling facilities at process stacks for our upcoming project.													
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.	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. <table><tr><th>Probable Pollution Sources</th><th>Mitigation Measures</th></tr><tr><td colspan="2">Ferro Alloy Plant:</td></tr><tr><td rowspan="2">Fumes from SAF</td><td>Bag Filters (Proposed: 2 Nos.)</td></tr><tr><td>Dust Suppression Systems (Fixed & Mobile water Sprinklers)</td></tr><tr><td>Raw Material Handling Area</td><td>Bag Filter (Proposed: 1 No.)</td></tr><tr><td colspan="2">Briquette Plant:</td></tr><tr><td>Dust from Process</td><td>Dust Suppression System (Fixed & Mobile water Sprinklers)</td></tr></table>	Probable Pollution Sources	Mitigation Measures	Ferro Alloy Plant:		Fumes from SAF	Bag Filters (Proposed: 2 Nos.)	Dust Suppression Systems (Fixed & Mobile water Sprinklers)	Raw Material Handling Area	Bag Filter (Proposed: 1 No.)	Briquette Plant:		Dust from Process	Dust Suppression System (Fixed & Mobile water Sprinklers)
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vi.	The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.	The project proponent will provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.													
vii.	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.													

	roads, shop floors, roofs, regularly.	
viii.	Ensure covered transportation and conveying of raw material to prevent spillage and dust generation. The project proponent uses leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.	We will always use covered vehicle for conveying of raw material.
ix.	Recycle and reuse 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.	Manganese and/or Chrome ore fines, coke fines and Lime fines may be used/reused in the process after due processing in compliance with regulations.
x.	The project proponent shall provide primary and secondary fume extraction system at all heat treatment furnaces.	The project proponent shall provide primary and secondary fume extraction system at all heat treatment furnaces.
xi.	Wind shelter fence and chemical spraying shall be provided on the raw material stock piles.	We shall keep all our raw material within covered shed or covered with tarpaulin.
xii.	Design the ventilation system for adequate air changes as per prevailing norms for all tunnels, motor houses, Oil Cellars.	It shall be complied.

xiii.	Pollution control system in the plant shall be provided as per the CREP Guidelines of CPCB.	It will be compiled for upcoming plant. <table><tr><th>Probable Pollution Sources</th><th>Mitigation Measures</th></tr><tr><td colspan="2">Ferro Alloy Plant:</td></tr><tr><td rowspan="2">Fumes from SAF</td><td>Bag Filters (Proposed: 2 Nos.)</td></tr><tr><td>Dust Suppression Systems (Fixed & Mobile water Sprinklers)</td></tr><tr><td>Raw Material Handling Area</td><td>Bag Filter (Proposed: 1 No.)</td></tr><tr><td colspan="2">Briquette Plant:</td></tr><tr><td>Dust from Process</td><td>Dust Suppression System (Fixed & Mobile water Sprinklers)</td></tr></table>	Probable Pollution Sources	Mitigation Measures	Ferro Alloy Plant:		Fumes from SAF	Bag Filters (Proposed: 2 Nos.)	Dust Suppression Systems (Fixed & Mobile water Sprinklers)	Raw Material Handling Area	Bag Filter (Proposed: 1 No.)	Briquette Plant:		Dust from Process	Dust Suppression System (Fixed & Mobile water Sprinklers)
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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	The project proponent will adopt the Clean Air practices for the plant like Bag Filter, dust suppression system & Stacks of adequate height at relevant points shall be installed for the proposed project. Fugitive dust emissions generating from the handling and stockpiling of raw material in open stockyards would be controlled by water sprinkling. All closed zone working areas such as conveyor transfer points, dust generation points, would be provided with multiple dust extraction (DE) systems at several emission points to control the fugitive dust emissions inside the plant premises. Also water will be sprayed in the surrounding villages to arrest suspended dust in the atmosphere.													

	suspended dust in the atmosphere.	
xv.	Bag filters shall be cleaned regularly and efficiency of bag filter system shall be monitored at regular intervals.	Bag filters will be cleaned regularly and efficiency of bag filter system is being monitored at regular intervals.
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.	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.
xvii.	The particulate matter emissions from the process stacks shall be less than 30 mg/Nm ³ and measures shall be undertaken as per the submitted action plan. Efficient Air monitoring equipment shall be installed	The particulate matter emissions from the process stacks will be less than 30 mg/Nm ³ and measures shall be undertaken as per the submitted action plan. Efficient Air monitoring equipment shall be installed. And it will be maintained.
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.	It will be complied. (Mn/Cr ore instead of Fe Ore) a) Fog and mist sprinkler will be installed. b) We will use covered vehicle for transport of materials. c) Wheel washing mechanism will be carried out.

	c. Wheel washing mechanism shall be provided in entry and exit gates with complete recirculation system.	
xix.	Briquetting and Jigging plant shall be installed in Ferro Alloys Plant	We will set up a ferro-alloy plant by installation of 2x9 MVA Submerged Arc Furnaces along with Briquetting Plant (10 TPH) Ferro Chrome slag after chrome recovery through the Jigging process will be used in land filling / road construction purpose after TCLP test.
xx.	The PP shall minimize the evaporation losses in jigging operation to less than 10% using suitable advanced process.	Shall be complied.
xxi.	The 4 th hole extraction system shall be provided in the Sub Merged Arc Furnaces and EAF	The fourth hole fume extraction shall be provided in addition to the three holes for the electrodes, will be located in the furnace rooftop. A space between the ductwork and the fourth holes allow for the combustion of the gases. The gases are withdrawn from the furnace by suction through the fourth hole. After getting cleaned through bag-house the fume enters ID fans and being sent to chimney through which it is released in the atmosphere at safe height.
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	Shall be complied.

	only emission norms as per Indian Factories Act. The permissible limit for silica/quartz should be within 10 mg/m ³ for 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. (in case of Silico Manganese and Ferro Silicon alloy steel)	
xxiii .	No Ferro-chrome production shall be carried out without prior Environmental clearance from MOEF&CC	The Unit has already got the necessary Environmental Clearance from MoEF& CC vide File no. IA-J-11011/154/2022-IA-II(IND-I)) dt. 12 th October, 2023.
xxiv .	The Project proponent shall fix carbon monoxide detectors with critical alarms at strategic locations inside the Plant	Shall be complied.
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 this system from time to time according to equipment supplier specification through labs recognized under	Shall be complied.

	Environment (Protection) Act, 1986 or NABL accredited laboratories.	
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.	The project proponent already monitors 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. Report attached as ANNEXURE- 5.
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.	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. Layout plan attached as ANNEXURE - 6.
iv.	Water meters shall be provided at the inlet to all unit processes in the plants.	The Company shall install a water meter for their in-house consumption in the plants.
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.	The plant will be designed as a zero liquid discharge plant. The water will be recirculated through cooling and treatment. The entire wastewater will be recycled for various purposes inside the plant. Domestic wastewater will be treated in Sewage Treatment Plant (STP). Treated wastewater will be used for greenbelt purpose inside the plant premises.
vi.	The proposed project shall be designed as "Zero Liquid	The plant will be designed as a zero liquid discharge plant. The water will be recirculated through cooling and treatment.

	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.	The entire wastewater will be recycled for various purposes inside the plant. Domestic wastewater will be treated in Sewage Treatment Plant (STP). Treated wastewater will be used for greenbelt purpose inside the plant premises.
vii.	All stockyards shall have impervious flooring and shall be equipped with water spray system for dust suppression. Stock yards shall also have garland drains and catch pits to trap the run off material and shall be implemented as per the action plan submitted in EIA/EMP report.	Our stockyards shall have impervious flooring and shall be equipped with water spray system for dust suppression. For keeping our stockyard environment almost dust free it will be well ventilated having open doors for cross ventilation. Garland drains and catch pits to trap the run off material and shall also be implemented as per the action plan submitted in EIA/EMP report.
viii.	Rain water harvesting shall be implemented to recharge/harvest water as per the action plan submitted in the EIA/EMP report.	Rain water harvesting shall be implemented to recharge/harvest water as per the action plan submitted in the EIA/EMP report. Report is attached as ANNEXURE-7.
IV. Noise monitoring and prevention		
i.	Noise pollution shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and amendments	Shall be complied as the production has not yet been started.

	thereof, and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.	
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.	The ambient noise levels will be conformed to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.
V. Energy Conservation measures		
i.	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.	Will be complied
ii.	Provide LED lights in their offices and residential areas.	Will be complied
VI. Waste management		
i.	Oil Collection pits shall be provided in oil cellars to collect and reuse/recycle spilled oil.	Oil Collection pits will be provided and rest used oil will be send to authorized recycler.
ii.	Kitchen waste shall be composted or converted to biogas for further use.	Kitchen waste will be composted or converted to biogas for further use
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	Not applicable

	shall be submitted to the Ministry's Regional Office.	
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	Will be complied

	compliance report being submitted by the project proponents.	
v.	A proper action plan must be implemented to dispose of the electronic waste generated in the industry.	It will be complied.
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 during Ferro Manganese production will be used as a raw material for Silico Manganese production. ➤ Slag generated during Silico Manganese will be used for road construction / land filling. ➤ Ferro Chrome slag after chrome recovery through the Jigging process will be used in land filling / road construction purpose after TCLP test. ➤ Ferro Silicon Slag will be used in cement industries as a raw material & used for medium carbon silico manganese production purpose. ➤ Domestic solid waste from the plant and staff quarters will be disposed of suitably in consultation with the concerned Authority.
VII. Green Belt		
i.	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration by trees.	The project proponent will prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration by trees. Attached as ANNEXURE-8 .
ii.	Project proponent shall submit a study report on Decarbonisation program, which would essentially consist of company's carbon	Already attached as ANNEXURE-8 .

	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.	
iii.	Greening and Paving shall be implemented in the plant area to arrest soil erosion and dust pollution from exposed soil surface.	Shall be complied.
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.	Please find enclosed ANNEXURE -9.
ii.	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal	The project proponent will carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as

	Protection Equipment (PPE) as per the norms.	per the norms when the production will get started.
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 housing may be in the form of temporary structures to be removed after the completion of the project.	Being complied.
iv.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained.	It shall be complied. Please refer ANNEXURE-10.

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	The project proponent shall always maintain their Corporate Environment Responsibility (CER).
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	Panchayat and the District Administration as committed.	
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 MoEFandCC as a part of six-monthly report	It has been complied. Please refer ANNEXURE-11.
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.	A separate Environmental Cell both at the project and company head quarter level will be implemented alongside project operation commencement

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.	Shall be complied.
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 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.	It has been complied with as required and has been given in ANNEXURE – 12 .
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 with as required.

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 shall be complied with as required.
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.	The project proponent will 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. The testing reports for air monitoring are attached as ANNEXURE -4.
v.	Action plan for developing connecting and internal road in terms of MSA as per IRC guidelines shall be implemented.	We are developing all our major internal roads and all the roads are casted.
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.	The project proponent will 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.
vii.	The project proponent shall submit the environmental statement for each financial	The project proponent will submit the environmental statement for each financial year in Form-V to the concerned State

	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.	Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and puts it up on the website of the company.
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 concerned authorities, commencing the land development work and start of production operation by the project.	The project proponent will inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
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.	It will be complied.
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	There is no Schedule I species.

	furnished along with the six-monthly compliance report to the concerned Regional Office of the MoEFandCC.	
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.	Shall be complied once the plant will start its production.
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 (MoEFandCC).	Always shall be complied.
xiii.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the	Already complied with.

	provisions of Environment (Protection) Act, 1986.	
xiv.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Noted and complied with.
xv.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner will implement those conditions.
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.	The project authorities would be extending full cooperation to the officer (s) of the Regional Office by furnishing 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.	The project authorities would be extending full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports

LIST OF ANNEXURES:

Annexure-1 : Safeguard measures to minimize the impact on the habitation

Annexure-2 : Water agreement

Annexure-3 : Socio economic survey

Annexure-4: Air quality Monitoring Report

Annexure-5 : Ground Water Monitoring

Annexure-6 : Plant lay out

Annexure-7: Report on Rain water Harvesting

Annexure-8 : GHG Inventory

**Annexure-9 : Hazard identification and Risk Assessment (HIRA) and Disaster
Management Plan**

Annexure-10 : Occupational health surveillance of the workers

Annexure-11 : Corporate Environmental Policy

Annexure-12 : EC Advertisements

ENVIRONMENTAL & SOCIAL SAFEGUARD MEASURES



Satvik Enterprises Limited

**Mouza: Sahebdihi, PO: Hat Asuria, PS: Barjora,
District: Bankura, West Bengal**

1. PREFACE

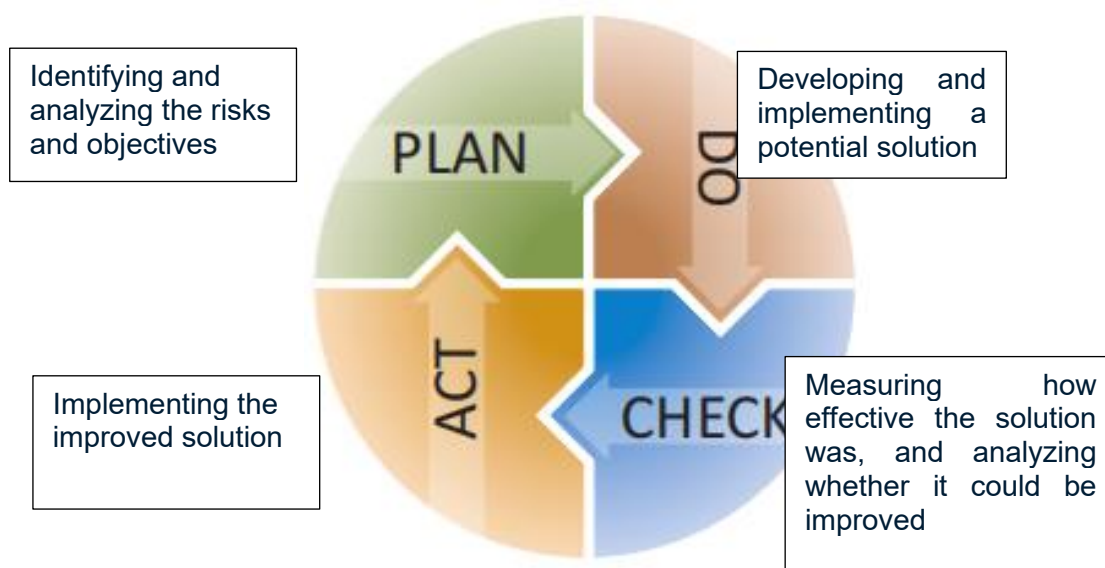
An "environmental and social safeguard measure" refers to a policy or practice implemented within a development project to identify, assess, and mitigate potential negative impacts on the environment and local communities, ensuring that projects are carried out in a sustainable way that protects people and the ecosystem involved.

It includes steps like conducting environmental impact assessments, community consultations, and implementing measures to minimize harm to biodiversity and livelihoods.

M/s Satvik Enterprises Limited, proposes to set up a ferro-alloy plant by installation of 2x9 MVA Submerged Arc Furnaces along with Briquetting Plant (10 TPH) at Mouza: Sahebdihi, PO: Hat Asuria, PS: Barjora, District: Bankura, West Bengal. It has been accorded Environmental Clearance (EC) by Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India vide its Letter dated 12th October, 2023 (Ref. File No.IA-J-11011/154/2022-IA-II(IND-I))

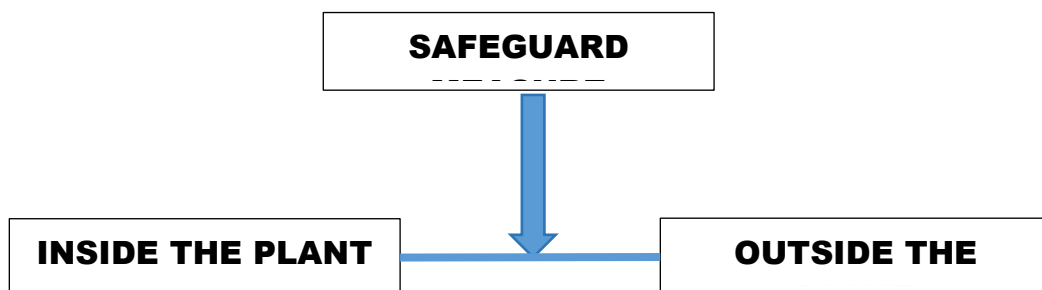
In order to put environmental as well as social safeguards, the company follows an ongoing process of Reviewing, Correcting and Improving its system.

The most common method is the Plan- Do-Check-Act cycle (PDCA), is being followed



2. PLANNING FOR TAKING SAFEGUARD MEASURE

In line with this activities **M/s. Satvik Enterprises Limited** has planned to take adequate safeguard measures within the plant as well as outside of the plant.



3.1 Inside the Plant

The company has taken adequate control measures towards safeguard measures.

Installation of bag filters, dust suppression system and stacks of adequate height at relevant points.

- ✓ 1 (one) no. of common stack will be installed for 2x9 MVA Submerged Arc Furnaces for the air quality parameters of PM10.
- ✓ For the suppression of fugitive dust, water sprinklers (static/dynamic), vacuum cleaners, wind shelter in stock yard shall be installed.
- ✓ Raw materials will be kept under shed.
- ✓ All internal roads shall be concreted.
- ✓ Covered Trucks shall be used in material transportation.
- ✓ All the vehicles plying for operation shall be properly tuned and maintained to keep emissions within the permissible limits.
- ✓ Adequate green belt shall be developed to mitigate pollution.
- ✓ The plant shall be designed as zero discharge plant as far as the process effluents are concerned. The water will be recirculated through cooling and treatment. No plant effluent is discharged outside the plant premises. The entire waste water is recycled for various purposes e.g., dust suppression & greenery purpose inside the plant.
- ✓ Domestic effluent from the various buildings / sheds of the plant is treated in the Sewage Treatment Plant (STP). Treated wastewater will be used for greenbelt purpose inside the plant premises.

There are two schools in the nearby areas namely Hat Ashuria High School & Suripara Primary School which are located around 0.8 kms and 1.03 kms. distance from the project site in E & SE direction respectively. There is also an ITI college located at a distance of 0.2 km in NE direction and Harirampur Kali Temple at a distance of 1.5 in WSW direction. The maximum incremental value of PM during operation of the proposed plant would be about $2.68 \mu\text{g}/\text{m}^3$, which will occur at a distance of 0.5 km in N directions. So, there will be no adverse impacts on the school after the propose expansion if the project. There will be development of green belt in and around the project site also to minimize the impact.

Above all, some mitigation measures are also being undertaken to minimise the impacts of the project on these areas has been summarized below:

Mitigation Measures to control Air Pollution:

- For the suppression of fugitive dust, sprinkling of water from tankers or other suitable means would be undertaken at the construction sites.
- The traffic and use of machinery will generate undesirable gaseous pollutants. The expected emission level would be insignificant.
- It would be ensured that all the vehicles plying during construction are properly tuned and maintained to keep emissions within the permissible limits.
- Proper greenbelt development and plantation inside and outside the plant premises.
- A separate storage area will be demarcated for construction material to confine the dust dispersion.
- All construction activities will take place within the project site. Best practices will be followed to ensure least disturbance to the natural drainage pattern of the site and the neighbourhood and thus, is not expected to have any impact on the local hydrology.

Mitigation Measures to minimize Water Pollution:

- Construction workers have been brought from nearby villages so that domestic water is saved in many ways due to temporary requirements only.
- The drains will be properly aligned in conformity with the site drainage pattern so that the alteration is kept to the minimum and flooding or soil erosion does not occur.
- No discharge of any kind will be done inside or outside plant premises in any water body.
- No discharge of waste water generated during construction activity will be done on soil or land area.

Mitigation Measures to minimize noise pollution:

- Selection of low noise generating machinery/equipment;
- Engineering specifications shall be stipulated as a condition to maintain noise level equal to or less than 75 dB(A) at 1 meter from all the relevant sources;
- Provision of rubber padding/noise isolators/silencers to contain the noise generated by machinery/equipment, wherever possible;

BARJORA PANCHAYAT SAMITI BARJORA : BANKURA

Memo.No. 183/BPS/22

Dated: 22.12.22

To
M/S SATVIK ENTERPRISES LTD.
Vill: Asuria, P.O. Hatasuria,
P.S. Barjora. Dt: Bankura.

Sub: 120 KL per day water supply in the Plant.
Ref: His letter dt: 23/07/22

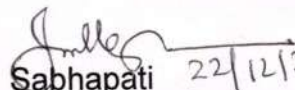
His prayer in connection with connection of Panchayat Samity Water Supply Scheme has been approved by Barjora Panchayat Samity.

We will supply water to the site of M/S SATVIK ENTERPRISES LTD. in pursuant to the 'MOU' we have with Damodar Valley Corporation and the source of water is Damodar River.

Water will be supplied to the site of M/S SATVIK ENTERPRISES LTD. through pipe line which exists for Industries nearby the project site of M/S SATVIK ENTERPRISES LTD.

This is for your information and taking necessary action.




Sabhapati 22/12/22
Barjora Panchayat Samiti
Sabhapati
Barjora Panchayat Samity
Barjora, Bankura

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	PG- 1
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ANNEXURE – 3

1.0 SOCIAL IMPACT ASSESSMENT STUDY

1.1 Background

M/s Satvik Enterprises Limited, proposes to set up a ferro-alloy plant by installation of 2x9 MVA Submerged Arc Furnaces along with Briquetting Plant (10 TPH) at Mouza: Sahebdihi, PO: Hat Asuria, PS: Barjora, District: Bankura, West Bengal. The geographical co-ordinates of the project site are Latitude: 23°23'54.60"N to 23°24'59.32"N and Longitude 87°17'15.69"E to 87°17'24.19"E with Above Mean Sea Level 272 ft (83m)

The setting up of Ferro Alloy Plant will have various direct and indirect impacts on the existing socio-economic environment in the surrounding area. Besides being a potential employment generating source, the project will result in the creation of various infrastructural facilities, leading to the improvement in the existing lifestyle and the economic condition of the local people. The areas, which are close to the project site shall derive maximum benefit. Hence, a Social Impact Assessment was undertaken.

1.2 Objectives of the Study

The objectives of the study are:

- To assess the existing socio-economic scenario;
- To examine the impact of the project on the existing socio-economic scenario;
- To ascertain the areas, to be considered for addressing the existing challenges for the improvement of the existing socio-economic condition;
- To ultimately derive the need-based activities, to be considered for Corporate Environment Responsibility (CER), based on the study;

1.3 Existing Socio-Economic Scenario

A 10 km radius around the project site has been considered as the study area for this project. A total of 181 villages of Bankura district fall under the 10 km radius study area. The 10 km radius study area around the proposed project also comprises of 7 Wards of Durgapur Municipal area under Paschim Burdwan District. Town Barjora is also in the 10 km radius study area.

The details of the existing demographic and socio-economic status of the study area is discussed in Chapter-3 of the EIA-EMP report.

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	PG- 2
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1.4 Methodology Adopted for the Study

The methodology adopted for the study is based on the following process:

Review of Secondary Data

Data from the secondary sources, viz. the latest available District Statistical Handbook, 2011 Census data and various census updates based on the 2011 census, were explored / reviewed for getting the demographic profile, occupational structure, etc. of the population within the study area (10 km radius) of the project site. The secondary data supplemented the primary data, collected through direct field survey.

Field Survey

The 2011 census data have been supplemented and corroborated by a socio-economic sample survey, conducted in May, 2022, covering a sample population size of 10316 numbers covering 2301 number of Households, distributed over 13 villages and 2 Census Towns within the study area through structured questionnaires portraying demographic and socio-economic aspects of the study area population. The data of this socio-economic survey including demographic and socio-economic characteristics, income profiles, household amenities, educational status etc. have been summarized in **Table – 1.3 to 1.6**. The salient findings of this sample survey are presented below:

Total Population	10316 (Male: 5299, Female: 5017)
No. of Households	2301 (Distributed over 13 villages and 2 Wards)
Family Size	4.48
Sex ratio	947 females per 1000 males
Caste (SC & ST)	31.77% w.r.t total Sampling population
Build of House of sample Households	Brick (64.84%), Multistoried Brick (22.16%), Thatched Roof Brick (11.78%), Mud (1.22%),
Lighting source of sample Households	Electricity (100.00%), Kerosene (0.00%), Others (0.00%)
Occupational Status of sample population	Workers (38.2%), Non-Workers (61.8%)
Source of Income	Agriculture (5.45%), Business / Trade (24.04%), Service (20.61%), Labour

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	(32.28%), Forestry / Plantation (1.29%), Livestock/ Fishery (3.58%), Others (12.75%)
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Comparison of the findings of the socio-economic sample survey with the 2011 census data are presented in **Table-1.0**.

Table-1.0 : Comparison of the findings of the socio-economic sample survey with the 2011 census data

Particulates	2011 Census	2021 Sample Survey
Family Size (persons per household)	4.47	4.48
Literacy Level in Area (% of total population)	67.1	68.6
Sex ratio in rural area	941 females per 1000 males	947 females per 1000 males
Schedule Caste & Schedule Tribe (% of total population)	31.4	31.77
Occupational Status in area of the total worker population (% of total population)	Workers - 40.5, Non-Workers - 59.5	Workers - 38.2, Non-Workers - 61.8

Table-1.1 : List of Villages for Sample Survey

S.N	Name of Village / town	No. of Households	Population		
			T	M	F
1	Deucha	45	194	98	96
2	Dejuri	72	346	181	165
3	Birsinghapur	51	257	138	119
4	Sonergram	28	113	60	53
5	Rajprasadpur	167	749	390	359
6	Hatashuria	280	1218	615	603
7	Mandarbani	119	509	264	245
8	Sarali	72	325	168	157
9	Madanhati	69	291	153	138
10	Bishanpur	48	259	136	123
11	Talanjuri	168	799	408	391
12	Saldanga	42	167	84	83
13	Basudebpur	35	148	74	74
14	Barjora (CT) WARD NO.-0001	797	3505	1802	1703
15	Ghutgarya (CT) WARD NO.-0001	308	1436	728	708
TOTAL		2301	10316	5299	5017

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	PG- 4
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It is evident from the above comparison that the family size has slightly increased, literacy rate has increased, sex ratio has increased and percentage of workers has slightly decreased in the villages under sample survey.

In addition to the above, the survey was conducted to find out whether the following facilities are available in these 13 villages and 2 Wards of 2 Census Towns:

1. Drinking Water Facility
2. Medical & Educational Facility
3. Garbage Collection & Disposal Facility
4. Facility for Skill Development
5. Electrification including Solar Power
6. Sanitation
7. Rainwater Harvesting
8. Roads
9. Sewerage System

1. Drinking Water Facility:

It was observed that out of 13 villages and 2 Wards of 2 Census Towns, all the villages have Govt. made treated tap water supply facility all year round which is used for drinking purposes. 6 villages and the 2 Wards have wells but only 2 villages namely Hat Asuria and Talanjuri and the 2 Wards have covered wells. All of the surveyed villages and Wards have public tube wells and bore wells.

2. Medical & Educational Facility:

Hat Asuria, Talanjuri & Rajprasadpur have community health centres, Mandarbani & Sarali have Primary health centres. 9 out of the 13 surveyed villages have primary health sub-centres. Only Hat Asuria has Maternity & Child Welfare Centre. The 2 wards have hospitals.

All the 13 surveyed villages have Govt. Pre-Primary and Primary schools. 10 villages have Govt. Middle schools. 7 villages have Govt. Secondary schools. 5 villages have Govt. Senior Secondary schools. None of the surveyed villages have colleges.

3. Garbage Collection & Disposal Facility:

There is no proper garbage collection and waste disposal facility, available at any of these 13 villages. Villagers throw their garbage in the open thereby creating an unhygienic condition in the surrounding areas.

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4. Facility for Skill Development:

The educational system at all these villages is based on the traditional pattern and is not job-oriented. There is no proper facility for skill development in any village.

5. Electrification including Solar Power:

Electricity is available in all the surveyed villages and the 2 Wards of Census Towns. However, there is no facility for utilizing solar power.

6. Sanitation

Hat Ashuria, Talanjuri and Rajprasadpur has Community Toilet complex. In all the surveyed villages, there are few houses which do not have facility of the toilet.

7. Rainwater Harvesting

There is no concern of rain water harvesting in any of the surveyed villages.

8. Roads

11 villages have other district roads passing through them. 9 villages have black-topped roads. Out of the 13 surveyed villages, 10 villages have all weather roads. Rest of the villages have Gravel (Kuchha) Roads. But the quality of existing village roads is not so good.

9. Sewerage System

There is no proper sewerage system as such in any of the villages in the study area.

1.5 IMPACT OF THE PROJECT ON THE EXISTING SOCIO-ECONOMIC SCENARIO

The implementation of the proposed project of **M/s Satvik Enterprises Limited**. will have both direct and indirect impact on the existing socio-economic scenario, which are highlighted as under:

- There will be generation of both direct and indirect employment due to the project. Around 180 persons will get employment during operation of the project. Mostly, local people will be benefited.
- A no. of business opportunities will be created for the local people to derive significant economic advantages.
- The company has identified various areas based on its survey in the above mentioned villages and the public hearing conducted. There will be development of various infrastructural facilities in the areas like roads, education, drinking water, solar lights etc..

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- During operation of the proposed project, there will be generation of some pollutants, which may affect the surrounding villages. The EIA Report contains the detailed study in this regard. It is observed that there will be insignificant impact on the air quality of the surrounding areas due to the operation of the proposed project. The green belt development within the project area shall further mitigate it and shall improve the aesthetic look of the area. The project is designed, based on “zero waste water discharge concept”.

1.6 CONCLUSION

Main occupation of the people is business / trade / agriculture and service in the nearby industries. However, unemployment is quite common in these villages. The proposed project has employment generation potential by recruiting local people directly for different activities of the project, both during construction and operational phases.

Based on the findings of the survey, the following issues have been considered by the company to include in its developmental activities, based on the need of the villagers:

1. Roads

The company has decided to construct 2 km metal road at Hat-Asuria village. The company will invest Rs. 48 lakh rupees for this purpose.

2. Lighting through Solar Power

The company will install 15 numbers of Solar Lights at suitable public places in Hat Asuria & Harirampur villages (@ Rs. 20,000/- per Light). The company will invest Rs. 3.0 lakh rupees for this purpose.

3. Rainwater Harvesting

Rain water harvesting shall be done by recharging of ground water and development of storage ponds in the surrounding villages. The overall concept is to harvest as much rain water (both through surface storage and ground water recharging) as the total quantity of fresh water, to be used in the project. The company shall construct 4 nos. of rainwater harvesting structures. 2 no. of rainwater harvesting ponds shall be created to store the rainwater for utilization during the lean months in the peripheral villages.

4. Drinking Water Supply Facility:

The company shall install 6 nos. of tubewells / Hand Pumps for drawing drinking water.

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5. Garbage Collection & Disposal Facility:

The company shall provide green and blue dustbins (300 nos @ Rs. 1000/- per unit) in local villages (under Swach Bharat Scheme) for waste segregation and handling.

6. Educational Facility:

The company shall provide Financial support to the Hat Asuria School for the renovation / repairing work through extension of building / class room/ development of library facilities/ provision of computers for educational development purpose.

7. Facility for Skill Development:

The company will facilitate skill development for unemployed local youths through National Skill Development Corporation, Govt. of India Scheme. In this connection, the company shall construct a building along with the necessary infrastructure for this purpose like sewing machines, computer systems & machines for making hand craft items along with necessary raw materials for training purpose.

Public Hearing was conducted on 25.11.2022 in connection with the proposed project, in which the local people raised the issues pertaining to generation of employment for the local people and youths, development of greenbelt within the plant as per norms, Hat Asuria School development work, steps to be taken to control environmental pollution especially operation of Air Pollution Control Device during operation of the unit, local road development work, drinking water supply.

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	PG- 8
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Table-1.2													
Distribution of Total Sampling Population													
S.N	Name of Village / town	No. of House-holds	Population			Age Wise Distribution					SC/ST		
			T	M	F	0-6	07-15	16-25	26-60	>60	T	M	F
1	Deucha	45	194	98	96	16	17	45	81	35	97	49	48
2	Dejuri	72	346	181	165	28	31	80	145	62	131	70	61
3	Birsinghapur	51	257	138	119	21	23	59	108	46	104	55	49
4	Sonergram	28	113	60	53	9	10	26	46	22	49	25	24
5	Rajprasadpur	167	749	390	359	60	67	172	315	135	210	108	102
6	Hatashuria	280	1218	615	603	97	110	284	512	215	501	256	245
7	Mandarbani	119	509	264	245	41	46	117	213	92	104	54	50
8	Sarali	72	325	168	157	26	29	75	137	58	110	57	53
9	Madanhati	69	291	153	138	22	26	69	122	52	148	75	73
10	Bishanpur	48	259	136	123	21	23	60	109	46	90	46	44
11	Talanjuri	168	799	408	391	64	72	184	336	143	301	152	149
12	Saldanga	42	167	84	83	13	16	38	70	30	138	70	68
13	Basudebpur	35	148	74	74	12	13	34	62	27	112	56	56
14	Barjora (CT) Ward No.-0001	797	3505	1802	1703	275	322	806	1472	630	894	456	438
15	Ghutgarya (CT) Ward No.-0001	308	1436	728	708	110	130	330	610	256	288	146	142
TOTAL		2301	10316	5299	5017	815	935	2379	4338	1849	3277	1675	1602
% w.r.t Total Sampling Population		-	-	51.37	48.63	7.90	9.06	23.06	42.05	17.92	31.77	16.24	15.53
Sex Ratio (Female/ 1000 males)		947											
Family Size		4.48											

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	PG- 9
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Table-1.3

Educational Status and Literacy Level of Sample Population

S.N	Name of Village / town	Primary	Secondary	Higher Secondary	Graduate	Post Graduate	Literate			Illiterate
							Total	Male	Female	Total
1	Deucha	12	29	33	22	9	125	66	59	69
2	Dejuri	23	62	69	46	21	221	137	84	125
3	Birsinghapur	18	48	53	36	17	172	105	67	85
4	Sonergram	9	20	22	15	4	78	42	36	35
5	Rajprasadpur	43	124	137	93	46	480	268	212	269
6	Hatashuria	63	186	206	140	71	790	412	378	428
7	Mandarbani	29	82	91	62	30	320	170	150	189
8	Sarali	22	58	64	43	20	207	116	91	118
9	Madanhati	17	44	49	33	15	182	93	89	109
10	Bishanpur	17	44	49	33	15	166	99	67	93
11	Talanjuri	52	152	169	114	57	544	314	230	255
12	Saldanga	10	22	24	16	6	105	54	51	62
13	Basudebpur	11	24	26	18	5	96	50	46	52
14	Barjora (CT) Ward No.-0001	240	738	817	553	287	2635	1446	1189	870
15	Ghutgarya (CT) Ward No.-0001	85	256	284	192	99	955	524	431	480
TOTAL		651	1889	2093	1416	702	7076	3896	3180	3239
% w.r.t Total Sampling Population		9.20	26.70	29.58	20.01	9.92	68.59			31.40
Male Literacy % w.r.t Male population		-	-	-	-	-	-	73.52	-	-
Female Literacy % w.r.t Female		-	-	-	-	-	-	-	63.38	-

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	PG- 10
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Table-1.4											
Occupational Status of Sample Population											
S.N	Name of Village / town	No. of Sample House Holds	Non-Workers	Workers							
				Agriculture	Forestry / Plantation	Livestock / Fishery	Business / Trade	Service	Labour	Others	Total
1	Deucha	45	121	6	1	3	17	15	24	8	74
2	Dejuri	72	204	11	2	5	33	29	45	17	142
3	Birsinghapur	51	175	6	1	3	19	17	26	10	82
4	Sonergram	28	66	4	1	2	11	8	15	6	47
5	Rajprasadpur	167	474	21	4	10	65	58	88	30	276
6	Hatashuria	280	728	37	7	17	115	99	156	58	489
7	Mandarbani	119	314	15	3	7	46	39	62	23	195
8	Sarali	72	224	8	2	4	24	21	33	10	102
9	Madanhati	69	159	10	2	5	31	27	42	15	132
10	Bishanpur	48	151	8	2	4	25	22	34	12	107
11	Talanjuri	168	433	27	5	13	84	74	117	46	366
12	Saldanga	42	88	6	1	3	19	16	26	9	80
13	Basudebpur	35	76	5	1	3	17	14	23	10	73
14	Barjora (CT) Ward No.-0001	797	2223	28	12	45	325	273	420	180	1283
15	Ghutgarya (CT) Ward No.-0001	308	940	23	7	17	117	101	162	69	496
Total		2301	6376	215	51	141	948	813	1273	503	3944
% w.r.t Total Sampling Population		-	61.8	5.45	1.29	3.58	24.04	20.61	32.28	12.75	38.2

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	PG- 11
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Table-1.5									
Amenities Available in Sample Households									
S.N	Name of Village / Town	No. of Sample Households	Built of House				Lighting Source		
			Brick	Multistoried Brick	Thatched Roof Brick	Mud	Electricity	Kerosene	Bio-Gas
1	Deucha	45	29	9	6	1	45	0	0
2	Dejuri	72	47	14	9	2	72	0	0
3	Birsinghapur	51	33	11	6	1	51	0	0
4	Sonergram	28	18	5	4	1	28	0	0
5	Rajprasadpur	167	109	34	21	3	167	0	0
6	Hatashuria	280	185	54	35	6	280	0	0
7	Mandarbani	119	77	25	15	2	119	0	0
8	Sarali	72	47	15	9	1	72	0	0
9	Madanhati	69	45	11	9	4	69	0	0
10	Bishanpur	48	31	10	6	1	48	0	0
11	Talanjuri	168	112	32	21	3	168	0	0
12	Saldanga	42	27	8	5	2	42	0	0
13	Basudebpur	35	23	7	4	1	35	0	0
14	Barjora (CT) Ward No.-0001	797	510	201	86	0	797	0	0
15	Ghutgarya (CT) Ward No.-0001	308	199	74	35	0	308	0	0
Total		2301	1492	510	271	28	2301	0	0
% w.r.t Total Sample Households		-	64.84	22.16	11.78	1.22	100.00	0.00	0.00

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	PG- 12
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Table -1.5 (Contd...)													
Amenities Available in Sample Households													
S.N	Name of Village/Town	No. of Sample Households	Fuel Used for Cooking						Own Transport				
			Coal	LPG	Bio-gas	Kerosene	Electricity	Wood	Car	Motor Cycle / Scooter	Bicycle	Others	Nothing
1	Deucha	45	6	36	0	0	-	3	1	21	26	3	5
2	Dejuri	72	9	57	0	0	-	6	2	33	42	4	7
3	Birsinghapur	51	7	42	0	0	-	2	2	23	30	3	4
4	Sonergram	28	4	23	0	0	-	1	1	13	16	1	2
5	Rajprasadpur	167	23	139	0	0	-	5	5	77	97	2	5
6	Hatashuria	280	27	245	0	0	-	8	8	129	162	0	7
7	Mandarbani	119	16	99	0	0	-	4	4	55	69	0	3
8	Sarali	72	13	57	0	0	-	2	2	33	42	2	8
9	Madanhati	69	10	54	0	0	-	5	2	32	40	0	6
10	Bishanpur	48	8	37	0	0	-	3	1	22	28	1	5
11	Talanjuri	168	33	130	0	0	-	5	5	77	97	2	2
12	Saldanga	42	7	33	0	0	-	2	6	19	24	0	5
13	Basudebpur	35	5	26	0	0	-	4	0	16	20	2	4
14	Barjora (CT) Ward No.-0001	797	24	773	0	0	-	0	143	438	462	0	2
15	Ghutgarya (CT) Ward No.-0001	308	13	295	0	0	-	0	55	169	179	0	5
Total		2301	205	2046	0	0	0	50	237	1157	1334	20	70
% w.r.t Total Sample Households		-	8.91	88.92	0.00	0.00	0.00	2.17	10.30	50.28	57.97	0.87	3.04

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	PG- 13
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Table-1.5 (Contd...)

Amenities Available in Sample Households

S. N	Name of Village / Town	No. of Sample House holds	Drinking Water Source							Sewer System				
			Tap	Well	Tank/ Pond/ Lake	Tube Well	River	Canal	Others	Sewer	Open Surface Drain	Box Surface Drain	Cess-pool Method	Pit System
1	Deucha	45	43	0	-	5	-	-	-	-	-	-	-	-
2	Dejuri	72	61	1	-	8	-	-	-	-	-	-	-	-
3	Birsinghapur	51	43	0	-	6	-	-	-	-	-	-	-	-
4	Sonergram	28	24	0	-	3	-	-	-	-	-	-	-	-
5	Rajprasadpur	167	142	2	-	18	-	-	-	-	-	-	-	-
6	Hatashuria	280	238	7	-	31	-	-	-	-	-	-	-	-
7	Mandarbani	119	101	2	-	13	-	-	-	-	-	-	-	-
8	Sarali	72	61	1	-	8	-	-	-	-	-	-	-	-
9	Madanhati	69	59	0	-	8	-	-	-	-	-	-	-	-
10	Bishanpur	48	41	0	-	5	-	-	-	-	-	-	-	-
11	Talanjuri	168	154	5	-	18	-	-	-	-	-	-	-	-
12	Saldanga	42	36	1	-	5	-	-	-	-	-	-	-	-
13	Basudebpur	35	30	0	-	4	-	-	-	-	-	-	-	-
14	Barjora (CT) Ward No.-0001	797	698	12	-	85	-	-	-	-	-	-	-	-
15	Ghutgarya (CT) Ward No.-0001	308	286	6	-	30	-	-	-	-	-	-	-	-
Total		2301	2017	37	-	247	-	-	-	-	-	-	-	-
% w.r.t Total Sample Households		-	87.66	1.61	-	10.73	-	-	-	-	-	-	-	-

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	PG- 14
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Table-1.6													
Income Details													
S. N	Name of Village / Town	No. of Sample House holds	5,000 to 9,999	10,000 to 14,999	15,000 to 19,999	20,000 and above	Agriculture	Forestry / Plantation	Livestock / Fishery	Business / Trade	Service	Labour	Others
			Monthly Income				Source of Income						
1	Deucha	45	18	13	9	5	6	1	3	17	15	24	8
2	Dejuri	72	19	24	14	15	11	2	5	33	29	45	17
3	Birsinghapur	51	14	20	10	7	6	1	3	19	17	26	10
4	Sonergram	28	11	8	6	3	4	1	2	11	8	15	6
5	Rajprasadpur	167	59	48	33	27	21	4	10	65	58	88	30
6	Hatashuria	280	97	76	58	49	37	7	17	115	99	156	58
7	Mandarbani	119	35	37	27	20	15	3	7	46	39	62	23
8	Sarali	72	25	21	13	13	8	2	4	24	21	33	10
9	Madanhati	69	27	18	15	9	10	2	5	31	27	42	15
10	Bishanpur	48	20	13	9	6	8	2	4	25	22	34	12
11	Talanjuri	168	54	46	38	30	27	5	13	84	74	117	46
12	Saldanga	42	15	14	8	5	6	1	3	19	16	26	9
13	Basudebpur	35	13	11	7	4	5	1	3	17	14	23	10
14	Barjora (CT) Ward No.-0001	797	211	219	199	168	28	12	45	325	273	420	180
15	Ghutgarya (CT) Ward No.-0001	308	82	88	72	66	23	7	17	117	101	162	69
Total		2301	700	656	518	427	215	51	141	948	813	1273	503
% w.r.t Total Sample Households		-	30.42	28.51	22.51	18.56	5.5	1.3	3.6	24.0	20.6	32.3	12.8

Envirotech East Pvt. Limited

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☎ – + 91 33 2443 8127/8128 ; + 91 33 4063 5011; email: eeplkol@gmail.com; eeplkol2@gmail.com

CIN NO : U74210WB1989PTC047403

Test Report No.:2024-25/EEPL/MON/ 730

Date: - 25.06.2024

AMBIENT AIR QUALITY MONITORING REPORT

Name of Industry	M/s. Satvik Enterprises Limited
Address	Mouza: Sahebdihi, P.O.- Hat Asuria, P.S.- Barjora, District-Bankura, West Bengal
Average Temperature (°C)	33
Weather Condition	Clear
Rainfall (mm)	-
Avg. Relative Humidity (%)	54
Barometric Pressure (mm Hg)	750

AMBIENT AIR QUALITY MONITORING RESULT

SL. No.	Location	Date of Monitoring	Reference Method	Parameter	Unit	Result	Standard **
1	Near Main Gate	04.06.2024	IS 5182 (Part 23) : 2006	PM ₁₀	µg/m ³	59	100
			IS 5182 (Part 24) :2019	PM _{2.5}	µg/m ³	27	60
			IS 5182 (Part 2) : 2001	SO ₂	µg/m ³	5	80
			IS 5182 (Part 6) : 2006	NO ₂	µg/m ³	22	80
			IS 5182 (Part 10) : 1999	CO	mg/m ³	0.53	2.0 (8 hr.)
2	Kendrabedia Village	04.06.2024	IS 5182 (Part 23) : 2006	PM ₁₀	µg/m ³	69	100
			IS 5182 (Part 24) :2019	PM _{2.5}	µg/m ³	34	60
			IS 5182 (Part 2) : 2001	SO ₂	µg/m ³	7	80
			IS 5182 (Part 6) : 2006	NO ₂	µg/m ³	28	80
			IS 5182 (Part 10) : 1999	CO	mg/m ³	0.61	2.0 (8 hr.)

Note: All above Meteorological conditions prevails at the time of monitoring

**National AAQ Standards, CPCB



For ENVIROTECH EAST (P) LTD.

(Authorized Signatory)

Envirotech East Pvt. Limited

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☎ – + 91 33 2443 8127/8128 ; + 91 33 4063 5011; email: eeplkol@gmail.com; eeplkol2@gmail.com

CIN NO : U74210WB1989PTC047403

Test Report No.:2024-25/EEPL/MON/ 731

Date: - 25.06.2024

AMBIENT AIR QUALITY MONITORING REPORT

Name of Industry	M/s. Satvik Enterprises Limited
Address	Mouza: Sahebdihi, P.O.- Hat Asuria, P.S.- Barjora, District-Bankura, West Bengal
Average Temperature (°C)	34
Weather Condition	Clear
Rainfall (mm)	-
Avg. Relative Humidity (%)	52
Barometric Pressure (mm Hg)	751

AMBIENT AIR QUALITY MONITORING RESULT

SL. No.	Location	Date of Monitoring	Reference Method	Parameter	Unit	Result	Standard **
3	Birshinghapur Village	05.06.2024	IS 5182 (Part 23) : 2006	PM ₁₀	µg/m ³	65	100
			IS 5182 (Part 24) :2019	PM _{2.5}	µg/m ³	31	60
			IS 5182 (Part 2) : 2001	SO ₂	µg/m ³	6	80
			IS 5182 (Part 6) : 2006	NO ₂	µg/m ³	26	80
			IS 5182 (Part 10) : 1999	CO	mg/m ³	0.64	2.0 (8 hr.)
4	Talanjuri Village	05.06.2024	IS 5182 (Part 23) : 2006	PM ₁₀	µg/m ³	46	100
			IS 5182 (Part 24) :2019	PM _{2.5}	µg/m ³	23	60
			IS 5182 (Part 2) : 2001	SO ₂	µg/m ³	4	80
			IS 5182 (Part 6) : 2006	NO ₂	µg/m ³	20	80
			IS 5182 (Part 10) : 1999	CO	mg/m ³	0.42	2.0 (8 hr.)

Note: All above Meteorological conditions prevails at the time of monitoring

**National AAQ Standards, CPCB



For ENVIROTECH EAST (P) LTD.


(Authorized Signatory)

Envirotech East Pvt. Limited

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CIN NO : U74210WB1989PTC047403

Test Report No.:2024-25/EEPL/MON/ 732

Date: - 25.06.2024

GROUND WATER ANALYSIS REPORT

Name of the Client	M/s. Satvik Enterprises Limited
Address	Mouza: Sahebdihi, P.O.- Hat Asuria, P.S.- Barjora, District- Bankura, West Bengal
Sampling Date	06.06.2024
Sampling Location	A) Borewell water (Project Site) B) Borewell water (Outside Plant Premises, Sonergram Village)
Sample Collected By	Company Representative

RESULTS OF SAMPLE

Sl. No.	Parameter	Unit	Concentration		IS: 10500:2012	
			A)	B)	Desirable Limit	Permissible limit
1	Colour	Hazen	<5	<5	5	15
2	Odour		Unobj.	Unobj.	Agreeable	Agreeable
3	Taste		Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	NTU	<1	<1	1	5
5	pH		7.16	7.29	6.5-8.5	No relaxation
6	Conductivity	μS/cm	653	605	-	-
7	Free Residual Chlorine	mg/L	<0.1	<0.1	0.2	1
8	Total Dissolved Solids	mg/L	385	364	500	2000
9	Phenol (as C ₆ H ₅ OH)	mg/L	<0.001	<0.001	0.001	No relaxation
10	Total Hardness (as CaCO ₃)	mg/L	190	182	200	600
11	Total Alkalinity (as CaCO ₃)	mg/L	192	182	200	600
12	Chloride (as Cl)	mg/L	86	95	250	1000
13	Sulphate (as SO ₄)	mg/L	38	23	200	400
14	Nitrate (as NO ₃)	mg/L	3.8	1.4	45	No Relaxation
15	Fluoride (as F)	mg/L	0.14	0.15	1	1.5
16	Calcium (as Ca)	mg/L	56	49	75	200
17	Magnesium (as Mg)	mg/L	12	15	30	100
18	Ammonia (as Total NH ₃ -N)	mg/L	<0.05	<0.05	0.5	No Relaxation
19	Boron (as B)	mg/L	<0.02	<0.02	0.5	2.4
20	Chromium (as Cr)	mg/L	<0.05	<0.05	0.05	No Relaxation
21	Copper (as Cu)	mg/L	<0.05	<0.05	0.05	1.5

Continued to Page 2

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22	Manganese (as Mn)	mg/L	<0.05	<0.05	0.1	0.3
23	Zinc (as Zn)	mg/L	<0.05	<0.05	5	15
24	Cadmium (as Cd)	mg/L	<0.003	<0.003	0.003	No Relaxation
25	Iron (as Fe)	mg/L	0.45	0.25	1	No Relaxation
26	Lead (as Pb)	mg/L	<0.01	<0.01	0.01	No Relaxation
27	Silver (as Ag)	mg/L	<0.05	<0.05	0.1	No Relaxation
28	Nickel (as Ni)	mg/L	<0.01	<0.01	0.02	No Relaxation
29	Arsenic (as As)	ppb	<2	<2	10	50
30	Mercury (as Hg)	ppb	<1	<1	1	No Relaxation
31	Total Coliforms	MPN/10 0ml	N.D.	N.D.	Shall not be detectable in any 100 ml	Shall not be detectable in any 100 ml

Contents of this report are meant for your guidance and should not be used for Advertisement, Evidence or Litigation.

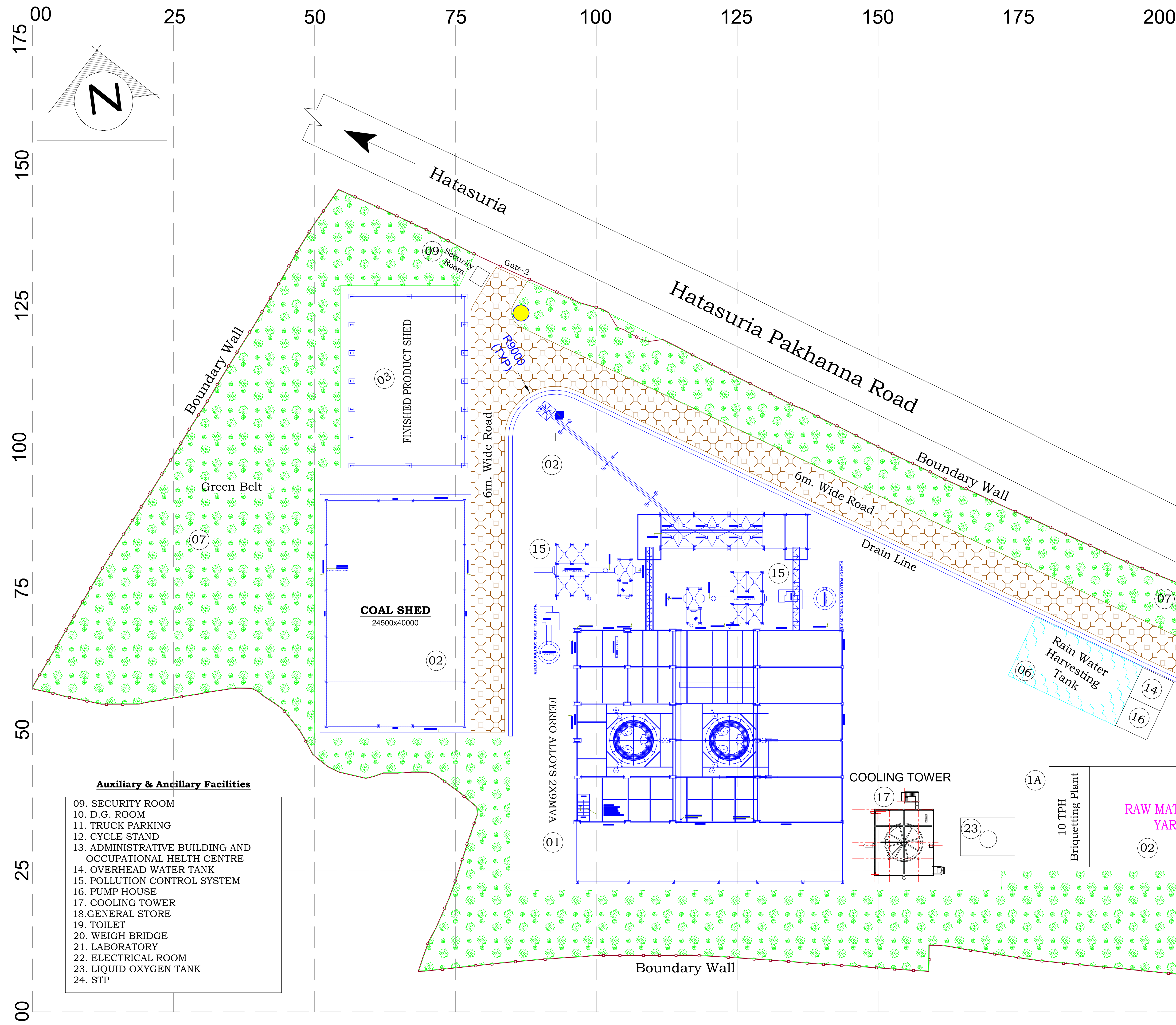
N.D.- Not Detected, Unobj.- Unobjectionable



For ENVIROTECH EAST (P) LTD.



(Authorized Signatory)



Greenbelt Development Plan :-

TOTAL PLANTATION AREA	TOTAL PLANTATION AREA
Total plantation area (33% of the Plant area)	1.775 Acre / 0.718 Ha
Total Nos of Trees (@2500 Trees / Ha)	1,800 Nos

LEGEND:-

S. No.	Area Description	Symbol
01.	Ferro Alloy Plant 2 X 9 MVA	
1A	Briquetting Plant - 10 TPH	
02.	Raw Material Yard & Coal Shed	
03.	Product Storage Shed	
04.	Administrative Building /Canteen / Parking /Sub-Station, Labour Quarter, Cooling Tower ETC.	
05.	Road & Paved area	
06.	Rain Water Harvesting Tank	
07.	Green Belt	
08.	Open Area	
TOTAL LAND (FACTORY BOUNDARY AREA)		

Land Use Pattern of Plant Area

S. No.	Area Description	Area (in Acre)	Area (in Ha)	Percentage
01.	Ferro Alloy Plant 2 X 9 MVA	0.900	0.364	16.73 %
1A	Briquetting Plant - 10 TPH	0.788	0.319	14.65 %
02.	Raw Material Yard & Coal Shed	0.122	0.049	2.27 %
03.	Product Storage Shed	0.378	0.153	7.03 %
04.	Administrative Building /Canteen / Parking /Sub-Station, Labour Quarter, Cooling Tower ETC.	0.400	0.162	7.43 %
05.	Road & Paved area	0.060	0.024	1.12 %
06.	Rain Water Harvesting Tank	1.775	0.718	33.00 %
07.	Green Belt	0.957	0.387	17.79 %
08.	Open Area			
TOTAL LAND (FACTORY BOUNDARY AREA)		5.380	2.177	100%

Auxiliary & Ancillary Facilities

09. SECURITY ROOM
10. D.G. ROOM
11. TRUCK PARKING
12. CYCLE STAND
13. ADMINISTRATIVE BUILDING AND OCCUPATIONAL HEALTH CENTRE
14. OVERHEAD WATER TANK
15. POLLUTION CONTROL SYSTEM
16. PUMP HOUSE
17. COOLING TOWER
18. GENERAL STORE
19. TOILET
20. WEIGH BRIDGE
21. LABORATORY
22. ELECTRICAL ROOM
23. LIQUID OXYGEN TANK
24. STP

NOTES

- 1). ALL DIMENSIONS ARE IN MM.
- 2). ALL GRID SPACING ARE @ 25.0 METERS BOTHWAYS.
- 3). ASSEMBLY POINT

Scale- 1:700

Quantity	Title/Name, designation, material, dimension etc		Article No./Reference		
Drawn by <i>Partha Bag</i>	Checked by - date	Approved by - date	Filename	Date	Page
				24.03.2022	A2
			PROPOSED FERRO ALLOY PLANT		
Mouza: Hat-Asuria & Basudebpur (North), P.O. Hat Asuria PS. : Barjora, Dist.: Bankura (WB)			SEL/PLANT LAYOUT/01	REV. 0	Sheet 1 OF 3

ANNEXURE 7

RAIN WATER HARVESTING

The entire land of the plant area has to be levelled in such a way that Rain Water flows down to the RCC constructed Rain Water storage tank. Water will enter into the storage tank through filter bed. Filter bed will be made with different size of gravels and core sand. The filtrate water will be stored in the tank. The same water will be rinsed for greenery purpose through water pump and motor. The residue of the filter bed will be removed manually from time to time.

Rain Water harvesting potential:

Total Project Area –2.18 hectares (5.38 acres)

Average annual rain fall in the project area - 1400 mm

Average annual monsoon rain fall - 80% of 1400 mm = 1120 mm (say)

Volume of surface run off in the plant campus = $2.18 \times 1.12 \times 0.4$ ham,
= 0.97664 ham say 0.0097 mcm

Rain water harvesting potential of the plant campus – 0.0097 mcm

Around 600 cu.m of water therefore can be conserved within the proposed plant. Considering the average depth of 2.5 m in storage tanks, area for surface storage involves around 0.02 ha (0.06 acres) which is 1% of the project area.

Rain Water Harvesting through Ground Water recharging

Apart from Surface storage of rain water, there is plan for rain water harvesting through recharging of ground water in the surrounding villages.

Ground Water Recharging System:

There will be Single Silt Trap Chamber of 4 feet diameter. Single Recharge chamber of 2-3 meter depth with 30-60 meter Boring inserted with specially perforated 6" Diameter PVC Pipe Rain water harvesting with Injection Recharging system will be provided.

Potential:

Underground water recharging rate will be @ 15 m³/Hour or 360 KLD. In normal course of rainfall, rain water will be recharged and excess water will overflow. In case of abnormal huge rainfall, the excess water will be passed through overflow drainage system. The above Single System can recharge rain water upto 48,600 cu.m/Annum.

The company will develop 2 ponds in the nearby villages to store around 60,000 cu.m. rain water.

To recharge 1,94,400 cu.m rain water, 4 recharging systems shall be installed in the nearby villages.

Table-1.0 : Rain Water Harvesting

Description	Water Volume
Water Conservation through RWH:	
RWH through surface storage inside the plant area.	600 cum
RWH through Surface Water Storage out side the plant by creating two (2) Nos. of Ponds (@ 30,000 cu.m of each pond) in the nearby villages.	60,000 cum
RWH through ground Water recharging in the surrounding villages (4 nos. Recharging system @2.5 lakhs each) Total cost - 10 Lakhs	1,94,400 cum
Total Harvested Rain Water	2,55,000 cum

GREEN HOUSE GAS INVENTORY



M/s Satvik Enterprises Limited

1. PREFACE

M/s Satvik Enterprises Limited, proposes to set up a ferro-alloy plant by installation of 2x9 MVA Submerged Arc Furnaces along with Briquetting Plant (10 TPH) at Mouza: Sahebdihi, PO: Hat Asuria, PS: Barjora, District: Bankura, West Bengal. The geographical co-ordinates of the project site are Latitude: 23°23'54.60"N to 23°24'59.32"N and Longitude 87°17'15.69"E to 87°17'24.19"E with Above Mean Sea Level 272 ft (83m). It has been accorded Environmental Clearance (EC) by Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India vide its Letter dated 12th October, 2023 (Ref. File No.IA-J-11011/154/2022-IA-II(IND-I))

2. 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 CO₂, CH₄ and N₂O 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.

The Carbon footprint of the proposed project is presented below,

Quantity of Ferro Alloy Production : 44,400 TPA

Fixed Carbon Consumption PMT of Ferro Alloy Production : 400 Kg

Fixed Carbon Consumption Per Annum : $(400 \text{ Kg}/1000) \times 44,400 \text{ TPA}$
 $= 17,760 \text{ TPA Carbon}$

Carbon - di - Oxide Generation Per Annum : $\text{FC Consumption PA} \times 44/12$
 $= 17,760 \times 44 / 12$
 $= 65,120 \text{ TPA CO}_2$

The Carbon sequestration by the proposed project is presented below,

1. INSTALLATION OF LED LIGHT IN PLANT

The total capacity of LED light in the plant will be 0.5 MW. LED saves 40 - 60% energy.

The corresponding energy consumption in case of incandescent light will be 0.83 MW considering 30% more energy than led. Hence, there will be saving of 0.33 MW $(=0.83-0.5)$ with the use of LED light.

This will save coal burning to the extent of 0.297 TPH $(=0.33 \times 0.9)$.

Total carbon reduction will be $0.297 \times 0.3 = 0.0891 \text{ TPH}$

**Total CO₂ reduction will be $0.0891 \text{ TPH} \times (44/12) \times 24 \times 330$
 $= 2587.5 \text{ TPA}$**

2. CO₂ REDUCTION DUE TO GREEN BELT

Total greenbelt area proposed = 0.72 hectares (1.78 acres)

Total number of trees = 1800 trees

A hard wood tree absorb 10 - 40 kg CO₂ per annum

There, 1800 Trees will absorb $1800 \times 25 / 1000 = 45 \text{ TPA CO}_2$

**Total CO₂ reduction annually due to the proposed project
 $= (2587.5 \text{ TPA} + 45 \text{ TPA})$
 $= 2632.5 \text{ TPA}$**

3. FURTHER MEASURES

With the growing concern over climate change, steel makers are faced with the challenge of finding ways of lowering CO₂ emissions without seriously undermining process efficiency or considerably adding to costs. The iron and steel industry is the largest industrial source of CO₂ 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.

- Increased Clean gas utilization
- 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.
- Installing state of art cleaner technologies
- Afforestation and Plantation
- 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

Conclusion

M/s Satvik Enterprises Limited is committed for reducing the overall Green House Gases and Ambient pollution levels through its cleaner technologies and Ecological development activities. The company is always serious on reducing the carbon emissions further through carbon storage techniques (*as and when available in Indian scenario*), usage of renewable energy resources,

Use of Natural gases and Electric Vehicles and Development of Greenbelt.

To conclude, no single option can yield the necessary CO₂ emission reductions but a combination of technologies are available that can be retrofitted to achieve significant reductions, which is possible after commercial deployment of the same by the Government of India. If Carbon capture and storage (CCS) plant is implemented then steel plants could become near zero emitters of CO₂. The commercial viability of CCS partly depends on the price of carbon emissions which is set by government policy. More large-scale demonstration projects, such as the Florange project in France could lead to lower costs in the future. If all technical, financial and cost barriers are overcome, then CCS could be more widely deployed in the steel industry. Developing new technologies, such as the HIsarna process, that are designed to generate a nitrogen-free and CO₂ rich offgas which will make CO₂ capture easier and cheaper.

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ANNEXURE - 9

RISK ASSESSMENT & DMP

1.1 INTRODUCTION

Considering the generic structure of the EIA/EMP report prescribed in EIA Notification dated 14.09.2006, this chapter comprises of public consultation, Risk Assessment, social impact assessment and R&R Action plan.

This chapter deals with identification of the potential hazards and disaster and preventive measures for disaster. The proposed expansion project may encounter with certain types of hazards which can disrupt normal activities suddenly and lead to disaster like fires, inundation, failure of machinery, hot metal spill, electrocution, to name a few. Disaster management plan has been formulated with an aim of taking precautionary step to control the hazard propagation and ward off disaster and also to take such action after the disaster which minimize the damage.

Industrial activities, involved in producing, treating, storing and handling of hazardous substances, have a high hazard potential to safety of man and environment at work place and outside. Recognising the need to control and minimize the risks posed by such activities, the Ministry of Environment, Forest and Climate Change (MoEF&CC) has notified the “Hazardous and other wastes (Management and Transboundary Movement) Rules in the year 2016 (In super session of the Manufacture, Storage, Handling and Transboundary Movement and Hazardous Waste Rules, 2008). For effective implementation of the rule, Ministry of Environment, Forest and Climate Change has provided a set of guidelines. The guidelines, in addition to other aspects, set out the responsibilities/duties needed to be performed by the occupier along with the procedure. The rule also lists out the industrial activities and chemicals, which are needed to be considered as hazardous.

The proposed activities are scrutinized in line with the above referred “Manufacture, storage and import of hazardous chemicals rules” and observations/findings are presented in this document.

Steel plant involves hazardous processes, which can result in significant risk to the work environment and hence needs proper assessment.

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During the manufacturing process of the proposed expansion project, the major substances to be handled / stored include Iron ore, Coal etc., fluxes such as dolomite and hot metal in MBF shall be handled. The major chemicals to be handled / stored include HSD, FO etc.

1.2 HAZARD IDENTIFICATION AND RISK ASSESSMENT

Hazard is a source or situation that has the potential for harm in terms of ill health, human injury, damage to property or the environment, or a combination of these factors. It has got both short and or long term effect on the work environment with considerable human and economic costs. A hazard may have a potential to create an emergency like situation at the work place. Hazard is a potential cause to lead to a disaster.

Hazards exist almost in every workplace in different forms and required to be identified, analyzed / assessed and controlled regarding the work processes, plant or substances. They arise from (i) workplace environment, (ii) use of plant and equipment (iii) use of substances & materials, (iv) poor work or plant design, (v) improper management systems and work procedures, and (vi) human behaviour.

Steel plants have several hazardous processes and operations which can cause considerable environmental, health and safety risk to the workforce. All the hazards cause potential risk to the work environment which include work force and work place and hence need proper assessment.

M/s Satvik Enterprises Limited has proposed to set up a Ferro-Alloy plant by installation of 2x9 MVA SAFs for production of 32,800 TPA Silico Manganese (Si-Mn) or 44,400 TPA Ferro Manganese (Fe-Mn) or 15,200 TPA Ferro Silicon (Fe-Si) or 33,600 TPA Ferro Chrome (Fe-Cr) along with 10 TPH Briquetting Plant at Mouza: Sahebdihi, PO: Hat Asuria, PS: Barjora, District: Bankura, West Bengal.

The plant has lower risk potential than those industries which deal with toxic and flammable chemicals. Off-site people are not exposed to any threat, hence the societal risk is insignificant.

This is an early check of major hazards, which are of risk potential - including the potential for disastrous interactions of the various plant operational activities. This checklist, though not strictly speaking a Hazard and Operability Study (HAZOP) would considerably facilitate a full scale HAZOP Study for final drawing up of risk management measures when the 'design-freeze' stage commences.

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The identification of hazards anticipation for the proposed project activities are presented below in **Table-1.1**.

TABLE 1.1
HAZARD IDENTIFICATION OF THE PROPOSED PROJECT

Item	Nature of Hazard	Hazard Potential
Raw Material Handling:		
Chrome & Manganese Ore, Quartz, Dolomite etc.	Dust	Minor
Coal (Non-coking)	Heat, Fire & Dust	Moderate
HSD/ Lube Oils / Greases	Heat & Fire	Major
Production Units:		
Ferro Alloy Plant	Fire, Heat & Dust	Moderate
Ferro Alloys Making Facilities : Submerged Arc Furnaces	Heat & Fire by Hot Metal & Slag Handling	Major
Briquette Plant	Fire, Heat & Dust	Moderate
Utilities :		
Fuel (Gas / Liquid)	Heat & Fire	Major
Electric Power Supply	Heat & Fire	Minor

Brief description of various Hazards in the proposed project of **M/s Satvik Enterprises Limited** is given below:

Brief of Nature of Hazard in the Project

NATURE OF HAZARD	SOURCES
Fire Hazard	➤ Hot Liquid metal ➤ Fire in HSD storage
Fire / Explosions due to Spillage of Liquid Metal	Spillage / Transfer of liquid Metal and hot slag.
Heat Radiations due to Hot Metal Handling	Spillage of liquid Metal and hot slag
Accidents due to Material Handling Equipment	Connected with all Material Handling Equipment

The consequences may result in death (in extreme case), severe burn and mechanical injury and will be limited to working personnel near the site of incident.

There will be three likely places in the projects where fuels can lead to hazards, namely:

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1. High Speed Diesel (HSD) will be required for operation of DG sets. It will be stored in drums to the tune of 200 litres. The quantity of the storage is low and it will be done in a separate shed equipped with fire fighting equipment.
2. LPG cylinders shall be stored in separate buildings, approximately 2 in nos. These will be commercial cylinders of 19 kg capacity. Hence, a round 95 kg of LPG shall be stored at a time. Fire fighting provision shall be there in the shed.
3. **Splashing of molten metal & solid waste** : Sudden break out of molten metal and slag have been known to take place during furnace operation. The break out may take place from weak portions of the hearth. The spillage of hot metal or slag can lead to severe burn injuries and fires. Explosions may also happen as a result of hot metal or slag falling in a pool of water resulting in human injuries and fire due to flying hot splinters and splashing of hot metal or slag. The spillage of hot metal can also take place due to hearth breakage, mould breakage and during transportation. The accidents can also occur due to failure of water-cooled panels, puncture in water-cooled lances, leakage of water from the walls of mould. Through checks in regular intervals and proper upkeep of furnace refractory and cooling panels, such incidents can be avoided.

The consequences may result in death (in extreme case), severe burn and mechanical injury and will be limited to working personnel near the site of incident.

1.2.1 APPROACH TO THE STUDY

Risk involves the occurrence or potential occurrence of some accidents consisting of an event or sequence of events. The risk assessment study covers the following:

1. Identification of potential hazard areas;
2. Identification of representative failure cases;
3. Assess the overall damage potential of the identified hazardous events and the impact zones from the accidental scenarios;
4. Assess overall suitability of the site from hazard minimization and disaster mitigation point of views;
5. Provide specific recommendations on the minimization of the worst accident possibilities; and

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6. Preparation of elaborated Disaster Management Plan (DMP), on-site & off-site emergency plan, which includes occupational and health safety plan.

1.3 HAZARD ASSESSMENT AND EVALUATION

1.3.1 METHODOLOGY

The hazards expected from this plant include the pool fire situation due to the leakage of HSD storage tanks. There will be total 2 nos. of storage tanks, 2x20 KL for HSD. The tanks (made of mild steel), will be provided with dyke. The worst case can be assumed when the entire content leak out into the dyke forming a pool, which may catch fire after getting source of ignition.

HSD STORAGE TANKS - POOL FIRE SCENARIO:

The maximum quantity of HSD stored at site are 120 L capacity. In the event of oil spillage through a small leakage, fire will occur after getting ignition source. As the tanks will be provided with dyke, the fire will be limited within the dyke. The threshold limit for first degree burns is 4.5 kW/m^2 . Based on these results it can be concluded that the vulnerable zone in which the thermal fluxes higher than the threshold limit for first degree burns (4.5 kW/m^2) is restricted to 2.18 m.

The hazard distances for various radiation intensities are shown in **Table 1.2**.

TABLE-1.2
HAZARD DISTANCES DUE TO HSD TANK ON FIRE
(HSD Tank: 120 L)

Thermal Radiation Intensity (in kW/m^2)	Damage to People	Hazard Distances (in m)
37.5	100% lethality	0.66
25.0	50% lethality	0.87
12.5	1% lethality	1.49
4.5	1 st degree burns	2.18

The hazard distances for Thermal radiation are confined only to the plant premises. Hence, there will not be any thermal radiation impact on outside population due to the pool fire scenario.

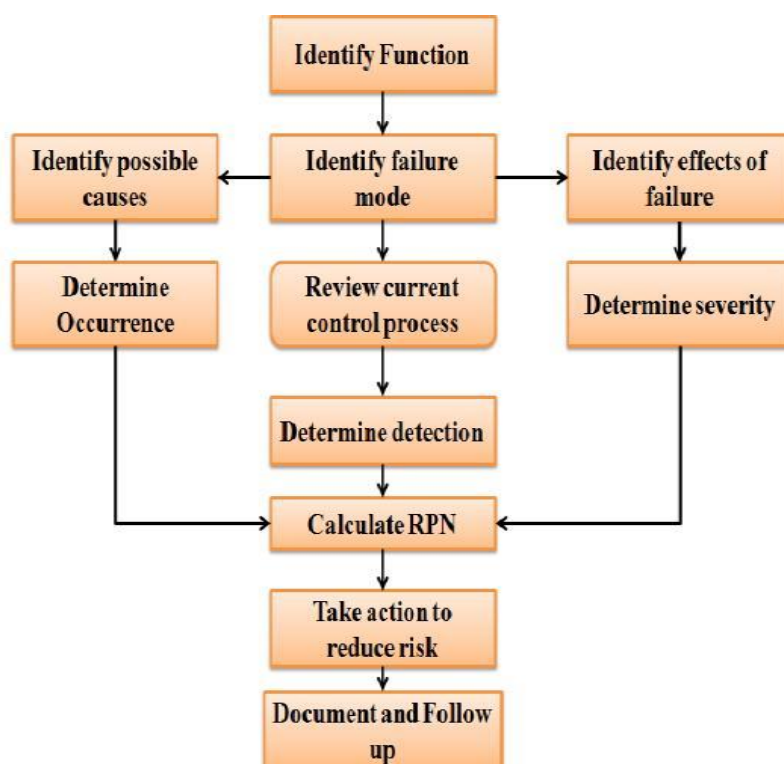
1.4 FAILURE MODE EFFECT ANALYSIS FOR PROCESS UNITS

Failure mode effects analysis (FMEA) is one of the most important and widely used tools for reliability analysis. FMEA identifies corrective actions, which are required to reduce failures to assure the highest possible yield safety and reliability. Even though it is a widely used reliability technique, it has some

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limitations in prioritizing the failure modes and output may be large for even simple systems, which may not deal easily with time sequence, environmental and maintenance components.

Figure – 1.1: Steps in FMEA



1.4.1 RISK PRIORITY NUMBER

Risk priority number (RPN) methodology is a technique for analysing the risk associated with potential failures during a FMEA analysis. To calculate risk priority number, severity, occurrence and detection are the three factors, which need to be determined.

$$\text{RPN} = (\text{Severity} \times \text{Occurrence} \times \text{Detection})$$

1.4.2 SEVERITY (S)

Severity is the seriousness of the effect of potential failure modes. Severity rating with the higher number represents the higher seriousness or risk which could cause death.

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Table-1.3: Example Table of Severity

Rating	Detection	Detection by design control
10	Absolute uncertainty	Design control cannot detect failure mode
9	Very remote	Very remote chance the design control detect failure mode
8	Remote	Remote chance the design control detect failure mode
7	Very low	Very low chance the design control detect failure mode
6	Low	Low chance the design control detect failure mode
5	Moderate	Moderate chance the design control detect failure mode
4	Moderately high	Moderately high chance the design control detect failure mode
3	High	High chance the design control detect failure mode
2	Very high	Very high chance the design control detect failure mode
1	Almost certain	Design will control detect failure mode

1.4.3 OCCURRENCE (O)

Occurrence ratings for FMEA are based on the likelihood that a cause may occur based on past failures and performances of the similar system in the similar activity. Occurrence values should contain data to provide justification.

Table –1.4 : Example table of Occurrence

Rating	Classification	Example
10 9	Very High	Inevitable failures
8 7	High	Repeated failures
6	Moderate	Occasional failures

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5		
4	Low remote	Few failures
3		
2	Remote	Failures unlikely
1		

1.4.4 DETECTION (D)

Detection is an assessment of the likelihood that the current controls will detect the cause of failure mode.

Table – 1.5: Example Table of Detection

Ranking	Effect	Severity effect
10	Hazardous without warning	Very high severity without warning
9	Hazardous with warning	Very high severity with warning
8	Very high	Destructive failure without safety
7	High	System inoperable equipment damage
6	Moderate	System inoperable with minor damage
5	Low	System inoperable without damage
4	Very low	Degradation of performance
3	Minor	System operable with some degradation in performance
2	Very minor	System operable with minimal interference
1	None	No effect

1.4.5 FMEA IMPLEMENTATION

Failure mode effect analysis is executed by a multidisciplinary team of experts with the help of process flow chart. Criteria of ranking of severity, occurrence and detection are selected based on the past failure records of the furnace. Risk priority

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number (RPN) is calculated using values of severity, occurrence and detection number.

TABLE - 1.6
RPN for Ferro Alloy Plant with Proposed Control Measures

Ferro Alloy Plant								
Components / Process	Failure Mode	Failure Effect	Failure Cause	S	O	D	RPN	Control Measures
Furnace	Recirculating cooling water coming in contact with the molten metal or slag	Spillage of Hot Spurting of metal/slag. Explosion under extreme cases.	Leakage of water from the refractory walls Operate	8	2	2	32	Regular inspection and Periodic maintenance
Furnace	Presence of Oil & Grease and other impurities	Sudden catching of fires and flames	Improper Maintenance	4	3	3	36	Regular inspection and Periodic maintenance
Chrome Briquette manufacturing plant								
Conveyor Belt	Friction	Fire	Improper Maintenance	8	2	2	32	Belt Sway Switch and Lubricating the rotating parts regularly

1.4.6 RESULT OF FEMA FOR PROCESS UNIT

The hot metal from Furnaces is transported by crane, which carry moderate risk priority number. This is well equipped with the interlocking facility with alarm in case of any overloading. Moreover, proper marking with ROW along with all safe guards to ensure safe transfer of hot metal.

1.4.7 RISK REDUCTION OPPORTUNITIES

The following opportunities will be considered as a potential means of reducing identified risks during the detailed design phase:

- Safety organization is of prime importance in the plant, where safety depends so much on workers' reaction to potential hazards. The first responsibility for management is to provide the safest possible physical conditions, Accident-prevention committees, workers' safety delegates, safety incentives, competitions, suggestion schemes, slogans and warning notices can all play an important part in safety programmes.
- Provision for adequate water capacity to supply fire protection systems and critical process water;
- Isolate people from load carrying/mechanical handling systems, vehicle traffic and storage and stacking locations;

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- Installation of fit-for-purpose access ways and fall protection systems to facilitate safe access to fixed and mobile plant;
- Provision and integrity of process tanks, waste holding tanks and bunded areas as per relevant standards;
- Arrange display signs for material strictly prohibited inside any work premises like inflammable materials, firearms, weapons & ammunitions, etc.
- Developing 'Dos' & 'Don'ts' during various types of works like working at heights etc.
- Ensure that emergency control mechanisms like switch, valve and emergency lamp are covered with shield, water & shock resistance cover during rain etc. and peddle switch for bigger rotating machinery mixer etc. There should be no temporary cable joints and open air working switch yard at enriched level.
- In addition to the yard fire hydrant system, process area would be provided with fire and smoke detection alarm system. Fire detection system would be interlocked with automated water sprinklers.
- Security of facility to prevent unauthorized access to plant, introduction of prohibited items, and control of onsite traffic; and
- Development of emergency response management systems commensurate.

Overall, an integrated approach combining good engineering and maintenance practices, safe job procedures, worker training and use of personal protective equipment (PPE) is required to control hazards.

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CHEMICAL DATA SHEET

The factory will have only fire hazardous chemicals as shown below:

Fire Hazardous Chemicals	Handling	Storage Facility	Nature of Hazardous
L i HSD	Storage Tanks	Drums / Tank segregated	Fire hazard

Likely occurrence of major accidents from:

- a) Storage – Likely occurrence of major accidents could only be a fire and explosion.
- b) Process – From Processes also likely occurrence of major accident could be fire. Since processes does not involve any toxic chemicals and hence, no chance of leakage of toxic gases.
- c) Leakage / Splashing of liquid metal.

Physical range of consequences propagating:

- a) From storage – Entire process plant
- b) From process – Localize to affected area

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DISASTER MANAGEMENT PLAN

A disaster can be termed as a catastrophic situation in which suddenly, people are plunged into helplessness and suffering, as a result, require protection, clothing, shelter, medical and social care and other necessities of life. A disaster is an unanticipated combination of circumstances that causes serious body injuries, loss of life or extensive damage to the plant facilities or total.

In the above sections, risk assessment has been made, based on the potential hazards, identified for the said project.

Disasters can be divided into two main groups. In the first, disasters resulting from natural phenomena like

1. Cyclone
2. Earthquake
3. Sabotage
4. Riot
5. Air Raid

The Disaster Management Plan of the company is divided into two parts:

- (i) Onsite Emergency Plan
In this plan, the company officers will be provided with pre-designated responsibilities for dealing with the emergency.
- (ii) Offsite Emergency Plan
In this, different Govt. agencies will be conformed about the emergency for necessary help and support from them.

1.0 OBJECTIVE OF DISASTER MANAGEMENT PLAN

The DMP is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

In order to implement the disaster management plan effectively, the same will be widely circulated and personnel training given through rehearsals/drills. The disaster management plan would reflect the probable consequence of the undesired event due to deteriorating conditions.

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To tackle the consequences of a major emergency inside the factory or immediate vicinity of the factory, a disaster management plan has to be formulated and this planned emergency document is called “Disaster Management Plan”.

The main objective of the industrial disaster management plan is to make better use of the combined resources of the plant and the outside services to achieve the following:

- Appropriate training should be provided to ensure safe operation of the crane for hot metal transfer. There should be adequate communication and use of standard hand signals between crane drivers and slingers to prevent injuries from sudden unexpected crane movement / spillage of hot metal.
- Ensuring proper safe guard by providing rail guards with inter locks in all those areas where hot metal transfer takes place.
- Inspection and maintenance programs for crane parts, ropes, lifting tackle, hooks to prevent dropped loads.
- Safe ways to access to the cranes to ward off falls and accidents on crane transverse ways.
- Regular maintenance shall be ensured for the mechanical parts of trolleys viz., Gearbox, Axial, Wheels etc., to avoid any spillage of hot metal during transportation.
- Proper training should be given to the workers, which should include information about the potential hazards, safe methods of work, avoidance of associated risks and wearing of PPE.
- Furnace operators should be protected by enclosing the source of noise through providing sound proof shelters. Reducing exposure time may prove effective. Hearing protectors (earmuffs /earplugs) are often needed in high-noise areas.
- All dangerous parts of machinery and equipment, including elevators, conveyors, long travel shafts, gearing on overhead cranes etc., should be securely guarded.
- Adequate ventilation should be provided throughout the plant wherever substantial quantity of dust, fumes and gas are generated, coupled with the highest level of cleanliness and housekeeping.
- Gas equipment should be regularly inspected and well maintained in order to prevent any gas leakage. Whenever any work is to be done in an environment likely to contain toxic gas, carbon monoxide gas detectors should be used to ensure safety. When work in a dangerous zone is

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inevitable, self-contained or supplied-air respirators should be worn. Breathing-air cylinders should always be kept in ready to use condition.

- Heat protection should be provided adequately between the workers and radiant heat sources, such as furnaces or hot metal.

1.1 ON-SITE EMERGENCY PLAN

- A)** The disaster control procedure lays down the efforts to be made to prevent fatal accidents, physical harm or injury to personnel and damage to equipment facilities materials. It requires coordinated efforts of all employees to control and eliminate a disastrous situation.
- B)** All efforts to control a disaster will be coordinated among the various co-ordinators and all actions, taken will be as directed by the chief co-ordinator. The co-ordinating members will be responsible to keep him posted on the development and course of action will be followed by them [refer **Annexure-1-I**].

1.2 FACILITIES TO BE AVAILABLE WITHIN THE FACTORY

- a) Fire Fighting Facility**
The entire factory is already protected with fire extinguishing system from outside and inside the shop floor.
- b) Material Handling**
Mobile cranes, fork lifts, trucks, trolleys will be used in the plant. The same could be used at time of emergency for handling the material.
- d) Personnel Protective Equipment**
Safety shoe, safety helmets, safety goggles, asbestos hand gloves, rubber hand gloves, acid proof aprons, earplugs, aprons, leg guards etc. will be made available in the Central store of the plant. At the time of emergency, the same can be made easily available by safety coordinator.
- e) Medical Facility**
The Plant will have the required emergency medical facilities and health check-up for the workers will be done regularly by the visiting Doctors. In case of major accident, persons will be referred to nearest Hospital/Primary Health Centre.

1.3 OBJECTIVES

The objective of the On-site Emergency Plan will be to make maximum use of both the internal as well as the external resources:

M/s Satvik Enterprises Limited	Environmental Impact Assessment for Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, P.O. : Hat -Asuria & PS: Barjora, District: Bankura in West Bengal.	15
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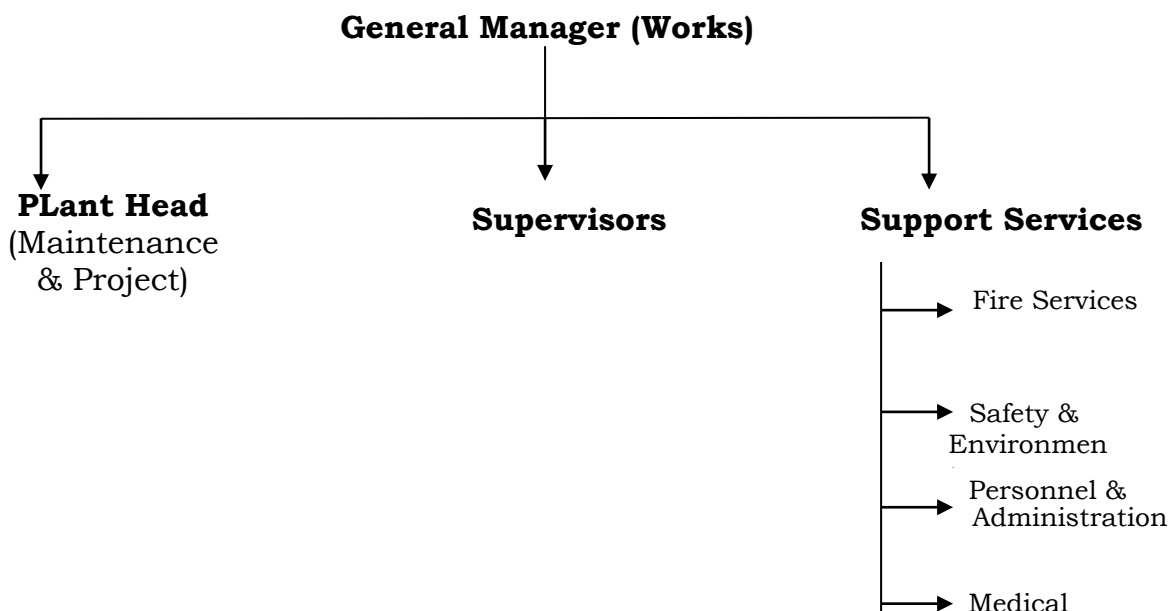
- For rescue and treatment of casualties and safeguard personnel in the premises.
- To minimize damage to property and environment.
- To initially contain and ultimately bring the incident under control.
- To ensure safe rehabilitation of affected areas.
- To provide authoritative information to the news media.
- To preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of emergency.

1.4 KEY PERSONNEL AND RESPONSIBILITIES

The actions necessary in an emergency will clearly depend upon the surrounding circumstances. Nevertheless, it is imperative that the required actions will be initiated and directed by nominated people, each having specified responsibilities as part of coordinated plan. Such nominated personnel will be known as Key Personnel.

1.5 ORGANIZATION

The Central Disaster Management Cell (DMC) will be set up under the direct charge of General Manager (Works). Organizational structure is as below:



General Manager (Works) will be empowered to declare emergency and he would be in charge of all operations in such situations. He will be supported by GM (Maintenance & Projects), Divisional Heads of respective all Plants, Security and Fire Fighting, Administration, Medical Officer, In-charge Safety and Environment in handling such a situation.

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Disaster Control Cell will operate from the Administrative block during emergency.

1.6 OFF SITE EMERGENCY PLAN

Type of emergency facilities/actions required from outside bodies:

- a)** Fire-fighting facilities required: Factory has its own fire-fighting facilities but during emergency, fire brigade can also be called.
- b)** During emergency help of Police will be required for evacuation of the people. Moreover, traffic control, security arrangements etc. shall be made available.
- c)** Medical help required: seriously injured personnel may be referred to the Hospital/Primary Health Centre depending upon the gravity and type of injuries.

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ANNEXURE - 1 - I

List of Key persons of On Site Emergency Plan

Sl. No.	Emergency Co-ordinator
1	Director
2	Plant Head
3	Supervisor (Maintenance & Projects)

ANNEXURE - 1 - II

List of Key persons of Off Site Emergency Plan

1.	Collector of District
2.	Asst. Director I & II
3.	Fire Office
4.	Controller of Explosive
5.	District Informatics Officer
6.	Superintendent of Police
7.	District Health Officer
8.	Assistant Labour Commissioner
9.	SDO

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ANNEXURE - 10

OCCUPATIONAL HEALTH SURVILLIENCE

All contractor personnel and temporary staff will be compelled to use safety equipment. Even the visitors will be advised to use helmet and safety shoes during plant visit. The list of PPE is given in **Table 1.0**.

TABLE: 1.0 PERSONAL PROTECTIVE EQUIPMENTS		
Protection for	Equipment	Protection Against
Head	Safety helmet	Fall of objects/hitting against objects during construction, maintenance, etc.
	Electrical resistance helmet	Electrical shock.
	Welder's leather cap	Splashing of liquid etc.
Eye	Panorama goggles with clear plastic vision	Oil and paint splashes, dust and chips.
	Spectacle-type goggles with blue lens	High temperature flame during furnace work.
Ear	Ear plugs or muffs	High noise level.
Nose	Dust, fume mask Oxygen mask & Air mask	Fine dust particles, fumes & gas
Face	Welding helmet and shield	Welding fumes, sparks and UV rays.
Body	Apron	Falling of hot chips, slag's, etc.
	Safety belt	Falling of persons from height.
	Hand gloves	Heat radiation.
	Electrical resistance gloves	Electric shock.
	Canvas gloves	Contact with oil, grease, etc.
Leg	Safety Shoe	Striking by objects, fall of objects and stepping on sharp or hot objects.

1.1 STANDARDS FOR THE OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM

As per OHSAS 18001, the following specification will be applicable to the organization as given below:

- The establishment of an Occupational Health and Safety Management System to eliminate risk to employees and other interested parties.
- Implement, Maintain and continually improve the occupational health and safety management system.
- Assign itself of its conformance with its stated occupational health and safety policy.

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1.2 CORE ELEMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

The basic core elements shall be:

- Occupational Health and Safety Policy
- Planning
- Implementation and operation
- Checking and corrective action
- Management review

1.3 OCCUPATIONAL HEALTH AND SAFETY POLICY

It sets an overall direction of the system. It lays down the principles involved as responsibilities, performance requirement, commitments, framework for setting objective and targets.

- In SEL, the hazards' places shall be identified and the nameplates will also be placed for the safety precaution to the relevant equipment.
- All the operational parts of the various departments will be identified and assessed.
- In the operational area, the broad categories of hazards could be mechanical, electrical, substance fire and explosions, which will be carefully monitored.

1.4 STRUCTURE AND RESPONSIBILITIES

In SEL, the following structure and responsibilities will form occupational health and safety management system.

- All personnel of respective departments shall lay down the safety rules and safety status of their work places and they will have the authority to place the manpower accordingly.
- The communication between the worker and management shall be clear about the position of hazards situation.
- The top management of the company will provide resources such as human resources, technological resources and financial resources for the implementation and control of the situation.
- There will be a quarterly evaluation of the improvement of the safety and occupational health of the employees.
- Safety officer will monitor the compliance of safety rules.

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1.5 TRAINING AWARENESS

In SEL, the workers, selected by their departmental head, training shall be given. During training, the following topics will be discussed:

- The occupational health and safety consequences of their activities.
- The emergency preparedness and response
- Importance of the occupational health and safety management system.
- Training to be taken into account the responsibility, ability and literacy of the person concerned and the nature and the extent of risk involved.

1.6 AUDIT OF OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

In SEL, there will also be a periodic internal audit, the main elements of which are given below:

- The planned arrangement and implemented system will conform to the specification.
- The Occupational Health and Safety Management system will be properly implemented and maintained.
- The audit status will be provided to top management.
- There must be external auditor to evaluate the present status of monitoring.

1.7 MANAGEMENT REVIEW

In SEL, there will be continuing suitability adequacy and effectiveness of the established Occupational Health and Safety Management System. The necessary information about the system will be collected and reviewed.

During First-Aid training programme, classes on occupational health & hygiene shall be held for the officers & staff. All employees will be exposed to this training.

1.8 PROPOSED HEALTH CHECK-UP PLAN

For the proposed Project pre-employment health check-up will be being followed by periodical health check up with special attention to occupational health. The periodicity of occupational health check-up will be followed as per the following schedule:

Sl. No.	Age Limit (years)	Frequency of Health Check-up
1.	Below 31	Once in 5 years
2.	31 – 40	Once in 4 years
3.	41 – 50	Once in 2 years
4.	Above 50	Once a year

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The health check-up shall be conducted as per the pre-designed format which will include Chest X-rays, Audiometry, Spirometry, Vision Testing, ECG, Blood and Urine test etc.

Under Pre-employment check-up the following test will be conducted:

- Chest x-rays
- Audiometry
- Spirometry
- Vision testing (Far & Near vision, color vision and any other ocular defect)
- ECG
- Haemogram (examination of the blood)
- Urine (Routine and Microscopic)
- Complete physical examination
 - Musculo-skeletal disorders (MSD)
 - Backache
 - Pain in minor and major joints
 - Fatigue, etc.

Medical records of each employee will be maintained separately and will be updated as per finding during monitoring. Medical records of the employee at the end of his / her term will be updated.



SATVIK ENTERPRISES LIMITED

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 Website : www.satvikindia.com

CORPORATE ENVIRONMENT POLICY

- i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.

Yes. The Company has a well laid down Environment Policy approved by the Board of Directors and the same is enclosed as APPENDIX—1.

- ii. Does the Environment Policy prescribe for standard operating process/ procedures to bring into focus any infringement/ deviation/ violation of the environmental or forest norms/ conditions? If so, it may be detailed in the EIA.

Yes. Environment Policy clearly mentions that, in case of emergency (non-compliance/deviation/violation/ major accident) immediate reporting to be done to the Directors/ Chairman of the Company and the same is enclosed as APPENDIX—1.

- iii. What is the hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.

The Board of Directors shall duly constitute a Cell called the Corporate Environment Cell (CEC). The CEC & Head of Environment Department of plant shall be committed to conduct the company operations in an environmentally sound manner. The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions is as under. The detailed hierarchical system is found in APPENDIX—1.

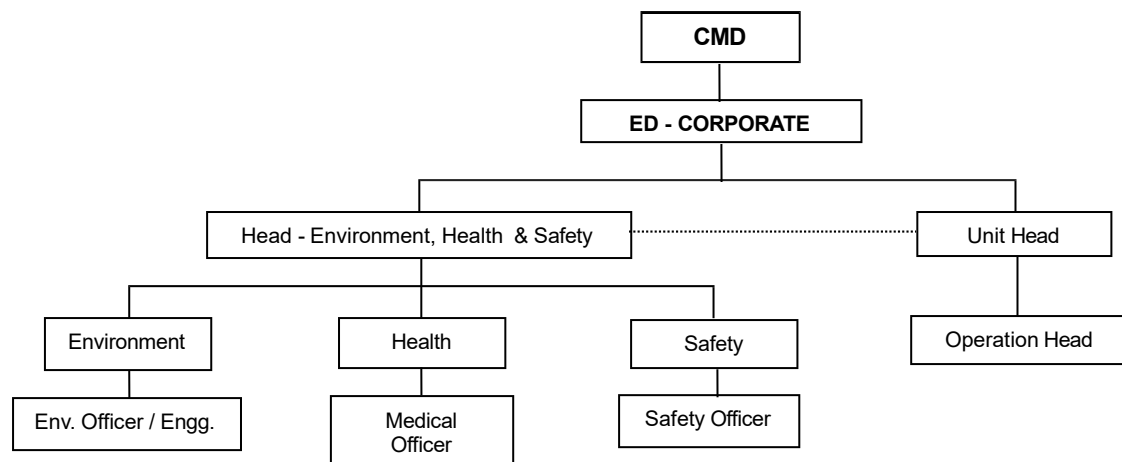
- iv. Does the company have a system of reporting non-compliances/ violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report.

Yes. To have proper checks and balances, the company has a well laid down system of reporting non-compliances/violations of environmental norms to the Board of Directors of the company. The Corporate Environment Cell (CEC) will formally review environment performance of the company and report environmental performance to the Board of Directors/Chairman of the company directly once every quarter. In case of emergency (non-compliance/deviation/violation/ major accident) immediate reporting to be done to the Directors/ Chairman of the Company.

Also, the Head of Environment Department will Ensure implementation of Policy on environment at plant level and review, report environment performance of the plant to the Board of Directors/ Chairman of the company through CEC Cell once every quarter. In case of emergency (non-compliance/deviation/violation/ major accident) Head of Environment Department will do immediate reporting to the Directors/ Chairman of the Company.



Authorized Signature



Environment Policy approved by the Board of Directors



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SATVIK ENTERPRISES LIMITED CORPORATE ENVIRONMENT POLICY

Satvik Enterprises Limited (hereinafter referred to as 'SEL'), a Private Limited company, was incorporated on 6th day of May 1997, having its registered office at 1, Park Lane, 3rd floor; Kolkata-700 016 in West Bengal. The company has developed core competence in the iron & steel industry with particular specialization in import (Manganese Ore) and export (Ferro-Alloys) of critical products in the steel supply chain. The growth of the group during last few years has been phenomenal and fast catching the attention of bankers, professionals and the industry as a whole. With verticals that are exploring innovative and sustainable avenues across base metals, alloys and steel, SEL is paving the way for India's emergence as a global superpower.

- The company, Satvik Enterprises Limited recognizes its joint responsibility with the Government and the Public to protect environment and is committed to regulate all its activities so as to follow best practicable means for minimizing adverse environmental impact arising out of its operations.

- The aim of the Policy is to do all that is reasonably practicable to prevent or minimize, encompassing all available knowledge and information, the risk of an adverse environmental impact arising from manufacturing and supply of our products.

- This Policy document reflects the continuing commitment of the Board for sound Environment Management of its operations. The Policy is applicable to all company operations covering manufacturing, sales and distribution and other offices. This document defines the aims and scope of the Policy as well as responsibilities for the achievement of the objectives laid down.

THE VISION

Our business approach not only seeks to minimize our environmental footprint but also contribute in enhancing the environmental quality in and around our work area. We are an ISO 9001:2015 certified company and are integrated trading systems consolidate our belief in quality assurance keeping sustainability in mind.

ENVIRONMENTAL POLICY

Satvik Enterprises Limited is committed to meeting the needs of customers in an environmentally sound manner, through continuous improvement in environmental performance in all our activities. Management at all levels, jointly with employees, is responsible and will be held accountable for company's environmental performance. Accordingly, SEL aims to:





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- ❖ Continuously assess our environmental impacts and measure and improve our environmental performance by adopting best practices for prevention and control of pollution.
- ❖ Ensure safety of its products and operations for the environment by using standards of environmental safety, which are scientifically sustainable and commonly acceptable.
- ❖ Develop, introduce and maintain environmental management systems across the company to meet the company standards as well as statutory requirements for environment. Verify compliance with these standards through regular auditing.
- ❖ Make continuous efforts to reduce water intensity and fresh water usage by increased use of harvested and recycled water in our operation.
- ❖ Reduce waste, conserve energy and explore opportunities for reuse and recycle.
- ❖ Conduct all our operations in an environmentally responsible manner that is better than statutory environment compliances and applicable standards.
- ❖ Involve all employees in the implementation of this Policy and provide appropriate training.
- ❖ Work in partnership with external bodies and Government agencies to promote environmental care, increase understanding of environmental issues and disseminate good practices.

CORPORATE RESPONSIBILITY

The Directors/ Chairman of the Company is responsible for the Compliance of the Policy. The Directors/ Chairman shall constitute a Cell called as Corporate Environment Cell (CEC) consisting of MD (Mr. Vikash Agarwal), CEO (Mr. Debashish Chatterjee), Lead Chemist (Mr. Vipin Singh) and Plant Production & Safety (Mr. Asim Roy) & Environmental Hazard Manager (Mr. Gopal Darbar). The CEC is committed to conduct the company operations in an environmentally sound manner. The CEC will:

- ❖ Set standards and establish environmental improvement objectives and targets for OMPL as a whole and for individual units, and ensure these are included in the annual operating plans.
- ❖ Formally review environment performance of the company and report environmental performance to the Board of Directors/ Chairman of the company directly once every quarter.
- ❖ In case of emergency (non-compliance/deviation/violation/ major accident) immediate reporting to be done to the Directors/ Chairman of the Company.
- ❖ Review environment performance on monthly basis and recognise exemplary performance.
- ❖ Ensure implementation of Policy on environment at plant level and review, report environment performance of the plant to the Board of Directors/ Chairman of the company through CEC Cell once every quarter.
- ❖ In case of emergency (non-compliance/deviation/violation/ major accident) Head of Environment Department will do immediate reporting to the Directors/ Chairman of the Company.

The Corporate Environment Cell in coordination with Head of Environment Department will:

- ❖ Ensure implementation of Policy on environment and compliance with the Company's environmental standards and the standards stipulated as per law.





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- ❖ Prevention of incidents or accidents that might result from abnormal operating conditions and
- ❖ Reduction of adverse effects that result from normal operating conditions.
- ❖ Establish appropriate management systems for environment management and ensure regular auditing to verify compliance.
- ❖ Establish systems for appropriate training in implementation of Environment Management Systems at work.
- ❖ Ensure periodic 3rd party environment audits through certification bodies to check efficacy of the Environment Management Systems
- ❖ Participate, wherever possible, with appropriate industry and Government bodies advising on environmental legislation and interact with national and local authorities concerned with protection of environment

The Hierarchy of our Corporate Environment management Cell that is being strictly followed is attached in next page:



Signature

Date: 13/09/22

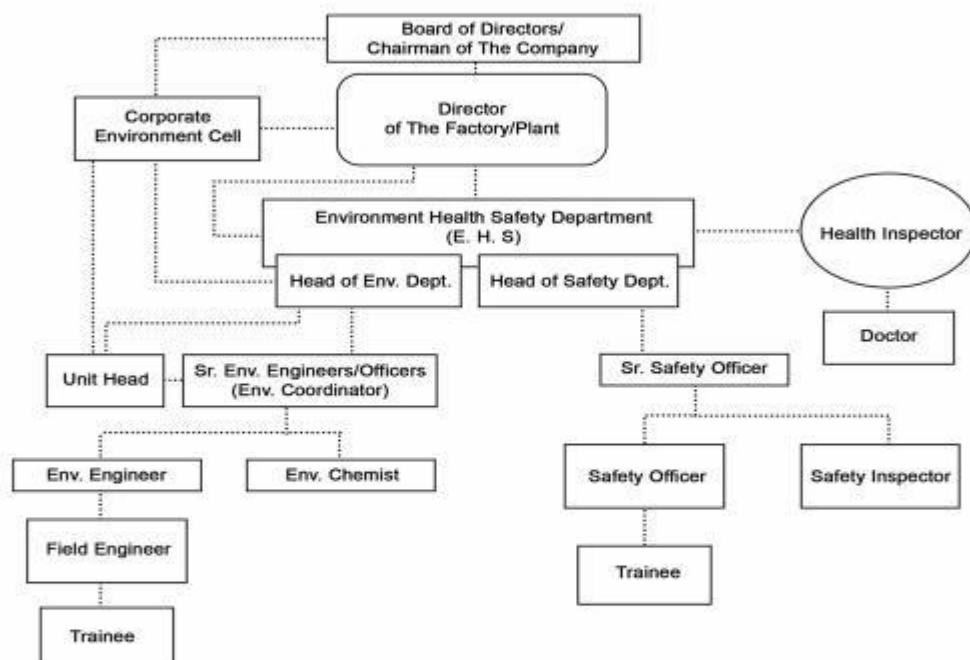


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KOLKATA



[Handwritten Signature]



Public Notice - "Barjora Project"

SATVIK ENTERPRISES LIMITED

The Statesman

Date : 13th Nov, 2023

| Page : 9

| Language : English

NOTICE

We hereby inform the public that our Proposed Installation of Ferro-Alloy Plant (SAF 2x9 MVA) and Ferro-Chrome Briquetting Plant (10 TPH) at Mouza: Sahebdihi, PO: Hat Asuria, PS: Barjora, District: Bankura, West Bengal has been accorded Environmental Clearance (EC) by Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India vide its Letter dated 12th October, 2023 (Ref. File No. IA-J-11011/154/2022-IA-II (IND-I)). The copy of the Environmental Clearance Letter is available with West Bengal Pollution Control Board and may also be seen at Website of the Ministry of Environment, Forest & Climate Change at <http://environmentclearance.nic.in>.

Project Proponent:
M/s Satvik Enterprises Limited
1, Park Lane, Kolkata-700016, West Bengal

Public Notice - “Barjora Project”

SATVIK ENTERPRISES LIMITED

खबरों में नं.1

सन्मार्ग

Date : 13th Nov, 2023

| Page : 3

| Language : Hindi

सूचना

हम एतद्वारा सर्वसाधारण को सूचित करते हैं कि मौजा-साहेबदिही, पोस्ट-हाट आसुरिया, थाना-बरजोरा, जिला-बांकुड़ा, पश्चिम बंगाल में फेरो-एलॉय प्लांट (एसएएफ 2x9 एमवीए) एवं फेरो-क्रोम ब्रिकेटिंग प्लांट (10 टीपीएच) की प्रस्तावित संस्थापना पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय (एमओईएफ एवं सीसी), भारत सरकार द्वारा इसके पत्र दिनांक 12 अक्टूबर, 2023 (संदर्भ फाइल नं. आईए-जे-11011/154/2022-IA-II(IND-I) के तहत पर्यावरण क्लियरेंस (ईसी) के अनुसार किया गया है। पर्यावरण क्लियरेंस की प्रति पश्चिम बंगाल प्रदूषण नियंत्रण परिषद एवं पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय की वेबसाइट <https://environmentclearance.nic.in> पर भी देखी जा सकती है।

प्रोजेक्ट प्रोपोनेंट

मेसर्स सात्विक इंटरप्राइजेज लिमिटेड

1, पार्क लेन, कोलकाता-700016, पश्चिम बंगाल

Public Notice - “Barjora Project”

SATVIK ENTERPRISES LIMITED

দৈনিক স্টেটসম্যান

Date : 13th Nov, 2023

Page : 5

Language : Bengali

জনসাধারণের জন্য বিজ্ঞপ্তি

এতদ্বারা সকল জনসাধারণকে জানানো
যাইতেছে যে, আমাদের প্রস্তাবিত প্রকল্পটি
অর্থাৎ পশ্চিমবঙ্গের বাঁকড়া জেলা, মৌজা
সাহেবডিহি, পোষ্ট অফিস হাত আসুরিয়া,
পুলিশ স্টেশন বড়জোড়াতে তার ফেরো
অ্যালয় প্রকল্পটি স্থাপনের জন্য পরিবেশগত
ছাড়পত্র (ই.সি) পরিবেশ, বন এবং জলবায়ু
পরিবর্তন মন্ত্রক বিভাগ (MoEF&CC), ভারত
সরকার ১২ই অক্টোবর ২০২৩ সালে মঞ্জুর
করেছেন (ছাড়পত্র তথ্যনির্দেশ সংখ্যা : IA-J-
11011/154/2022-IA-II(IND-I))।
পরিবেশগত ছাড়পত্রের অনুলিপিটি পশ্চিমবঙ্গ
দূষণ নিয়ন্ত্রণ পর্ষদ থেকে পাওয়া যাবে এবং
পরিবেশ, বন এবং জলবায়ু পরিবর্তন মন্ত্রক
বিভাগের (MoEF&CC) ওয়েবসাইট
<http://environmentclearance.nic.in>
থেকেও দেখা যাবে।

প্রকল্পকারীর নাম :

মেসার্স সত্বিক এন্টারপ্রাইজিস লিমিটেড
১ পার্ক লেন, কোলকাতা-৭৫০০১৬, পশ্চিমবঙ্গ